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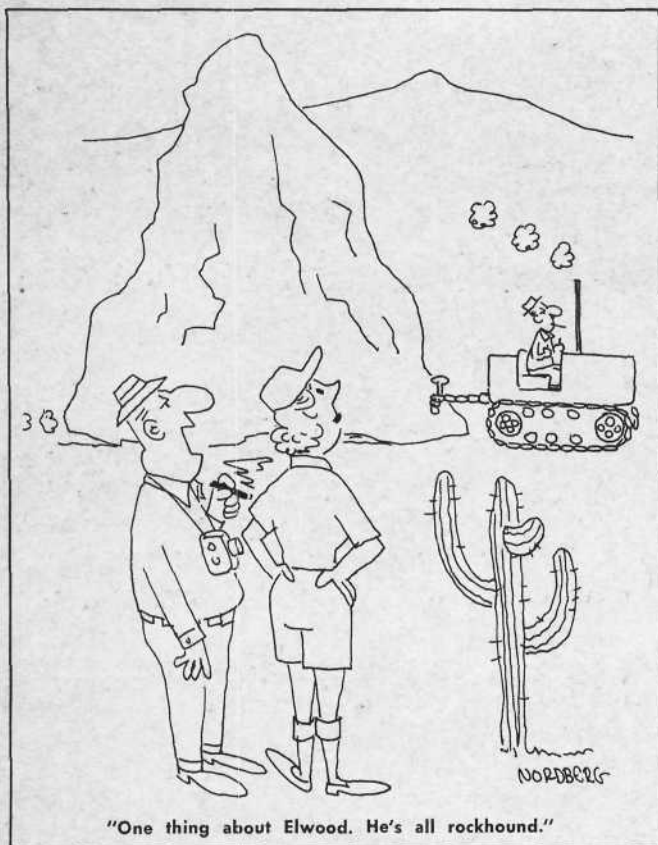
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desert detours

by Oren Arnold

Keep in mind, you strangers, that our word "desert" is really a misnomer. America has very little true sand desert where nothing grows, barely enough for movie sets. Most of ours is semi-desert only, which is close to ideal. Arid, colorful, exhilarating, exciting. It is the most fascinating laboratory in existence, for here is Nature's own testing ground, her region for research. Almost every plant and animal is a gee-whiz exhibit. The "barren" desert? You have been conditioned by the Sahara, not by ours.

My inferiority complex always causes me to drop in uninvited whenever I discover an isolated desert cabin or home; just can't shake off an abiding curiosity as to why people live Away Out Here. And their hospitality compulsion invariably rewards me with free coffee, free conversation, free meals.

Nothing irks me like seeing sun-bathed desert land which I refused to pay 50 cents an acre for in 1925, sell for \$5,000 to \$50,000 an acre.

Chief advantage of life in this Region of Room Enough is that you also have Time Enough. The desert is not a clock-eyed world.

Best fishing in America is not in Minnesota but between Salt Lake City and San Diego. You take Old Uncle Give-a-damn Jones—he drags whoppers out of the Colorado. Some of his specimens caught last summer are now six feet long. "In reporting the size of the fish you catch," a dern dude once

challenged him, "your story varies. You don't give the same report each time." Uncle Givvy patiently replied, "Certainly not, sir. I never tell a man more than I think he will believe."

This is of course free America with a free economy, and I am bitterly opposed to most government controls, especially from Washington. But I'll make an exception if Washington will rule out the billboards that besmirch our desert. They are man-made sores on God-made scenery.

We loved that sign facing us on the narrow, dangerous looking road across the California desert:

OH YES YOU CAN. MILLIONS HAVE

Up in sandy sun-drenched Twenty-Nine Palms, Alaska, where I was born in a split-level igloo, we developed the World's Most Delicious desert dessert. Try it:

Mix ½ cup of lemon juice with 1½ cups of sugar and chill. Into this syrup slowly pour 1 quart of whole milk (ice cold, to prevent curdling) while whipping with an egg beater. Freeze it at once—and by all means own a hand-turn or electric freezer, for no "store-bought" ice cream can match it! This is simple but deluxe Sun-Country Sherbet.

The teacher at Amboy, Calif., asked her fifth grade what the important letters U. N. stood for. One freckled lad replied, more accurately than he realized—"Unsettled Nations."

Significantly for us, Christ the Savior was born in a desert region much like ours. He was not "sophisticated" or citified. He sat on desert rocks to teach, trod dusty roads and went up barren hillsides to pray. He is now everywhere, yes, but I seem to find Him best when I too go out on the desert, in the soft twilight at eventide or at dawn.

My 12-year-old daughter and I bravely caught a harmless old chuckawalla out near Pinnacle Peak and proudly brought him the 40 miles in to show to her mother. "The poor thing," mother said, "you took away its freedom." So after supper daughter and I drove 40 miles back to Pinnacle Peak.

Rattlesnakes? To be sure, our desert has them. Almost every state has them (Hawaii has no snakes of any kind!). Pennsylvania has most of all. Biggest ones are found down South. None is as vicious as you penthoused Easterners imagine. In 35 years of tramping the Southwestern wilderness I have found only six. Bad people are more dangerous than bad snakes.

Best true snake story I know concerns my friend Ken Palmer. He took a rich New York dude onto the desert. A six-foot rattler challenged them. Elated, they opened the Cadillac trunk, scooped the snake into it to take back and show friends in sophisticated Scottsdale. Whs-s-st— just that quickly Mr. Snake disappeared—into the seat upholstery of the Cad!

Now would you ride 50 miles back to town with a live six-foot rattler lost somewhere in your car? . . . Makes a good continued story. Next month, if I don't forget it, I'll tell you what happened.

We do have dangerous desert birds. City folk are warned to beware of our Morning Grouse, our Duck-Billed Platitide, and our Hairy-Chested Backslapper. But our worst specimen is the one readily identified by its call—"Kinsey-Kinsey-Kinsey!" It's the dangerous Extra-Marital Lark, and is invariably followed by a Ruffled Spouse.

"If flattery gives you a big headache instead of a big head," said my philosopher friend Desert Steve Ragsdale, "you're a success."

It could be that ours is the Last Lucky Generation; we still have the open wilderness for Escape. When we in the Southwest feel knotted up, we can go onto the clean desert for Restoration. There we find quietude. There we forget headline horrors. There abides Peace.

The desert was created exclusively for the strong of heart. If you are a moral weakling, if you quiver about getting enough food and raiment, if you seek status rather than strength, if you nurse imaginary fears, if you lean heavily on anybody besides yourself and God—stay away. ///

LETTERS FROM OUR READERS

The Easy Way of Life . . .

To the Editor: The November article, "Cooking Over an Open Fire—the Easy Way" by Peggy Powell, meant well, but appears to have been concocted by someone whose ideas of backcountry camping include frequent jaunts to the store for ice. Indeed, the idea of tea-towels and placemats in any form will bring forth howls of laughter from every well-trained Girl Scout in the Western United States!

If one follows the precepts of Peggy Powell, every desirable backcountry desert area will be covered with the litter of "throwaway coffee cans," and many of the other accouterments of the "easy way." The author's absolute ignoring of the water situation indicates a lack of knowledge of actual desert backcountry camping methods. Any source of fluid is a bonus to desert camp cookery and canned goods containing it are the most desirable.

No animosity toward Author Powell is intended, but over the years *DESERT* has been accepted as an authority of the Southwestern Way of Life.

SUZANNE R. SNYDER
Kingman, Ariz.

Mini-Bike Problem . . .

To the Editor: After reading your report on mini-bikes in the November issue, one big question entered my mind. Since the mini-bikes don't have fenders, wouldn't there be a great deal of pebbles and sand picked-up by the tires and thrown back at the rider? I am seriously thinking of getting some sort of trail machine, but this question is making me hesitate.

ANDREW NELSON
Corvallis, Oregon

(No appreciable problem here unless you travel at high speed—and you can't go fast over loose footing.—Ed.)

Against the Birds . . .

To the Editor: Anent Dr. Edmund Jaeger's "Desert Woodpeckers" (*DESERT*, Oct. '61) I should like to add something: the Gila Woodpecker is without doubt the most destructive bird that flies! If any of you—as I do—live on the desert and try to raise a few citrus fruits and dates, you will become fully aware of "Ladderback's" destructive skill. They peck one small hole in grapefruit, orange, or tangerine and soon the fruit falls off, completely ruined. Dates they especially love; I have seen them fly away bearing a large date in beak many times.

Now I have a very high regard for the scientific eminence of Dr. Jaeger, but my observation of Mr. Gila for 30 years constrains me to say that Dr. Jaeger's statements in his article are "not the whole truth" about the Gila. If his sympathies are "with the bird," mine are certainly not.

JAMES A. DIFFIN
Florence, Ariz.



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JANUARY TRAVEL

By WELDON HEALD

Try A Phoenix Desert Park

WITH A metropolitan area of 700,000 people, Phoenix is one of the nation's fastest growing cities. Up - and - coming Phoenicians like to quote Lloyds of London as betting that Arizona's Capital City will someday be the world's largest metropolis. At any rate, the meteoric boom in tourists, agriculture and industry has given Phoenix the lush, affluent atmosphere of true cosmopolitanism, with gourmet restaurants, sophisticated entertainment, glamorous and exotic resort hotels, and luxurious homes and apartments.

But the hordes of visitors and new residents pouring into Arizona's famed "Valley of the Sun" haven't quite obliterated nature. Some of the finest and most scenic spots roundabout have been preserved as parks by the City and Maricopa County. In fact, the latter recently acquired 70,000 acres from the federal government for future outdoor recreation areas. These relic desert islands in a sea of humanity are maintained largely in a natural state, and are well worth visiting.

To the east is Papago Park and its southern extension, Tempe Park. Eight miles from downtown Phoenix, this is a large tract of original desert with a sparse growth of saguaro cactus and creosote bush among isolated outcroppings of rounded red rocks, which rise abruptly a hundred feet or more. Pockmarked with wind- and water-worn caves, like holes in a Swiss cheese, these bright colored monoliths give the area a rather theatrical appearance, which is a delight to color photographers.

There are several miles of unpaved roads winding among the great rocks, and one climbs to an eminence capped by a white pyramid. Here is an extensive view of the park, and the surrounding populous valley to its distant rim of tawny desert mountains. The pyramid marks the graves of George W. P. Hunt and his wife. He was Arizona's first state governor and served seven two-year terms before his death in 1934.

But the big show in Papago Park is the Desert Botanical Garden. Whether you are an incurable cactomaniac or can't tell a cholla from a senita, you shouldn't miss this. It

is doubtful if there is a larger and more spectacular collection of living desert plants anywhere in the country. Besides Arizona's 62 varieties of cactus, there are hundreds of Mexican and South American species growing in natural conditions, as well as succulents from Africa and Asia. Added to these are rare, unusual and weird plants from almost every arid region in the world. The general effect is unreal and startling—a sort of Alice in Desertland kind of place. The exhibit is open daily, including Sundays and holidays, from 9 a.m. to 5 p.m., and admission is free.

The Desert Botanical Garden of Arizona, as it is officially called, is a private non-profit educational institution founded in 1937 by the Arizona Cactus and Native Flora Society, Inc. It is supported by endowments, contributions, sale of books, and memberships. On the grounds is the attractive pueblo-style Webster Auditorium and Herbarium, in which free illustrated lectures and classes on "Know Your Desert Plants" are given each week on Wednesdays and Thursdays, November to April, at 3 p.m. The Society also publishes the

SAGUARO STANDS GUARD OVER AN EXPANSE OF GROUND SET ASIDE FOR RECREATIONAL PURPOSES NEAR TO FAST-GROWING PHOENIX



*Saguaro*land Bulletin 10 times a year. Annual dues are \$5 which includes the magazine, and there are 650 members in 26 countries. The address is P.O. Box 547, Tempe, Arizona.

At the entrance is a modern Visitor's Building, with book store, gift and souvenir shop, and information center. For 10c you purchase a booklet for a self-conducted Nature Walk through this desert wilderness of unreality. There are 62 marked stations which the booklet describes and explains. Along the way you will see the showy golden barrel cactus from Mexico, and Baja California's writhing caterpillar cactus, octopus cactus, the amazing knobby totem pole, and fantastic boojum or "upside-down" tree. There are also palms, mesquites, acacias, ironwoods, yuccas, palo verdes and ocotillos. Entwined among the branches of some of the trees are the long, snakelike stems of "moon cactus," one of the climbing cactuses of the tropical rain forests.

Then there is the Fisher Collection of about 950 North and South American species of cactus, and an interesting experimental area for the introduction of trees and shrubs native to other arid lands for horticultural and landscaping purposes. In the aluminum Lath House are sensitive plants from the two Americas, Africa and Asia. Here are many tropical species that couldn't survive in the open. With spiny geraniums, succulent lilies, and the transitional *Pereskia*—half rose, half cactus—the Lath House perhaps contains the most remarkable exhibit of all. From April to June there is a magnificent display of blossoms throughout the Garden, but because of the wide distribution of the thousands of plants from both Hemispheres, some blooms may be seen every month of the year.

Quite different is Phoenix South Mountain Park. Called the largest municipal park in the world, it covers an area of 14,817 acres and preserves the entire range of the Salt River Mountains, just outside the city limits. Within the reservation are 10 miles of paved roads and 40 miles of well-kept hiking and riding trails. There are also three planned picnic areas. These have ramadas, tables, grills and piped drinking water, as well as cement floors for dancing and roller skating, and some lighted areas for after-dark gatherings. In fact, you can have a quiet steak fry for two or attend a lively barbecue with several hundred people. However, the Park is closed from 12:30 a.m. to 5 a.m., and there is no overnight camping.

But development is restricted and a major portion of the reservation is maintained in a natural state, with several sections designated as "wilderness areas." These are traversed by delightful trails which thread the canyons and wind along the ridges. They climb to numerous wide-sweeping viewpoints over the valleys below, pass through rugged rock formations, and lead to ancient hieroglyphics made by the prehistoric Hohokam Indians.

Most of Arizona's varieties of cactus grown in the park, including the giant saguaro, and a total of 340 species of native desert plants have been listed. Wildlife, too, is protected, and both animals and birds are surprisingly abundant. Saddle horses are available at stables located just outside the park's north boundary.

The Main Entrance is eight miles directly south of the Phoenix business district, and you pay a fee of 25c per car there. The principal Park Road ascends the Salt River Mountains by easy grades to Dobbins Lookout, five miles. The elevation is 2330 feet and you look down across broad, flat Salt River Valley, 1000 feet below.

The panorama includes the whole of Phoenix and its clustered satellite cities to heaped-up mountains on the horizon, north and east. A directional viewfinder helps you to identify places.

The ridge road continues to Buena Vista, takeoff point for several wilderness trails, and a branch leads to Mount Suppoa, 2660 feet, highest in the Park. Its summit is a communications center, occupied by tall television transmitting towers and receiving stations. Nearby, Gila Valley Lookout gives a view southward over the irrigated fields of the Gila River Indian Reservation, home of the Pimas, and in the southeast looms the 9000-foot Santa Catalina Mountains, near Tucson, 100 miles distant.

The far western section of the Park is reached from the Main Entrance by a seven-mile road to San Juan Lookout Point, and a separate road enters the eastern part from Guadalupe. There is no direct connection between the latter and the Main Entrance except by trail. However, rugged Pima Canyon and the Indian picture writings are well worth visiting as a special trip.

There are four other desert recreation areas in the vicinity of Phoenix. City-owned Thunderbird Park, 10 miles north of Glendale in the Hedgpeth Hills, contains 1000 acres and has developed picnic grounds. North

Mountain Park is a scenic desert area of 275 acres, with picnic facilities, nature trail and small reptile exhibit. Estrella Mountain Park, 1850 acres, is maintained by Maricopa County, as is Lake Pleasant Regional Park, 37 miles northwest. Boating, swimming and camping may be enjoyed in the latter.

By all means sample the metropolitan diversions of Arizona's Capital City. But if human entertainment finally palls on you, try a Phoenix Desert Park. ///



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AFTER THREE days of road-testing Ford's Falcon Club Wagon, Chevrolet's Corvair Sport Wagon, and Volkswagen's Deluxe Station Wagon (all of them buses), I went home convinced that nowhere else are new-car models so individually designed. Despite a general similarity in outward appearance, the three competitive family buses are as different as an orange, a peach and an apple. This seems strange in view of the fact that most competitive sedans are about as different as door-knobs, give or take a little chrome stripping!

I've been a car buff all my life, and I have definite feelings about new vehicles. Comfort, power, handling ease, and economy have always intrigued me. On the other hand, I'm not far enough into the "expert" category for my thinking to become waterlogged with routine criticisms. I face a new breed of car with a certain naive enthusiasm. I like cars. I'd like to see more truly *useful* engineering improvements each season. Since that seems beyond hope, at present, I test cars by comparing them to the current market crop.

All three of the vehicles—Greenbriar, Club Wagon and VW—were tested before I made final notes. Thus, direct comparison between models was possible.

Desert devotees will find these buses very appealing—a good compromise between conventional car and four-wheel-drive vehicle. The bus gives you plenty of room for camping gear—and it can double as a family car for town use. These vehicles will be seen with more frequency on desert area roads.

GREENBRIAR: Chevrolet's entry

into the bus-wagon domain is stylish, low-slung and clean. No excess chrome clutters the body lines. Greenbriar is, in fact, 7 inches lower in overall height than the Falcon Club Wagon, and 6 inches lower than the Volkswagen. It is the heaviest of the three buses at 3032 pounds curb weight. Base price of the Corvair Greenbriar Sport Wagon is about \$2655 on the West Coast. From there, the price goes up rapidly with such extras as a four-speed transmission (\$64.60), a third seat (\$37.70), custom interior (\$215), and the usual extras such as radio and heater. Final price of this model delivered will approach \$3300.

Let me point out here that all three of the buses tested had base prices and final prices within a hundred dollars or so of each other. The impression that these new vehicles are "economy" versions of older types of transportation is false. Prices of the fully equipped bus will run very close to the *regular* deluxe station wagon bodies. For the record, this little detail should be noted.

A quick walk around the body of the Greenbriar reveals a large double-door in the middle of the curb side, double-doors in the rear, and the usual left and right front doors. Double doors on the driver (left) side of Greenbriar are optional. The three seats are roomy, firm, but not extra comfortable. Leg room for passengers is very good in the rear, fair in the center seat, and good in the front. My wife complained that the Greenbriar was hard to climb into. It's a high step. (Volkswagen has an assist handle on the dash near the front passenger door, which is a real aid. Ford and Chevrolet would

do well to follow this example.)

The wheelbase of Greenbriar is 95 inches, or 5 inches longer than the Falcon Club Wagon, and half-inch longer than the VW. The rear-door opening is necessarily choked down, due to the placement of the air-cooled six-cylinder Corvair engine in the rear. Actual dimensions for this cargo door are 44.5x35.4-inches. Cargo space in Greenbriar is advertised at just over 175 cubic feet.

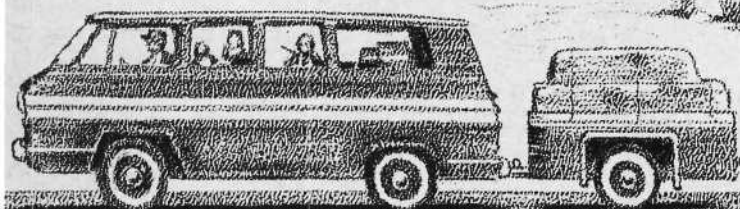
The cockpit is comfortable, and the steering wheel lies almost flat. Three transmissions are available: the standard three-speed manual, the four-speed manual, and Powerglide. The model I tested was equipped with the four-speed box. When you start the Corvair engine you immediately notice that engine noises come from behind and are barely audible. Acceleration is fair, about on a par with other six-cylinder cars.

First gear is a creeper, second gear a real shot in the arm—and then third gear seems to fall flat. Shifting into high gear seems almost pointless, since there is so little difference from third. I was disappointed in the four-speed box. Zipping around town, across railroad tracks, and down a stretch of freeway proved that Greenbriar responds fairly good. It tracks straight with no wander. Ride is firm but comfortable. Cornering is something to get used to—because you ride far forward. The turning circle is 42.6 feet.

I liked the solid feel of the body. Few squeaks or rattles annoyed me. But the low windshield-height forced me to stoop over to see overhead traffic lights. Out on the high road, Greenbriar rolled right along at the legal limits without strain. Hilly

'62 Family Bus

**A Desert
TEST DRIVE**
article by
V. LEE OERTLE



country forced me to downshift several times, since horsepower is limited.

Turning and maneuvering in traffic, in parking, and off on side-roads spoke well for Greenbriar. It is light on its feet, quiet running, and tight-turning. Doors were difficult to shut tightly, however.

All things considered, I'd say the Greenbriar is a dandy little bus, though a little short on performance and power, like most sixes. Some statistics: Fuel tank capacity is 18.5 gallons, overall length is 179.7 inches, width is 70 inches. Ground clearance is 8.1 inches, and tread is 58 inches front and rear. A vast array of extra camping equipment, both built-ins and accessory items, is available from Greenbriar dealers.

FALCON CLUB WAGON: If Ford's entry into the bus field is larger and bulkier than the Greenbriar, it is also roomier and more comfortable. I liked the large windshield, excellent visibility, peppy engine, and ease of gear-shifting. The Club Wagon is plain-looking and could certainly stand a face-lift. But under that prosaic skin everything functions satisfactorily. Engine options based on the six-cylinder water cooled Falcon are 85 and 101 horsepower, with two transmissions: Fordomatic and three-speed manual. My test model had the latter. Base price of the Falcon Club Wagon is about \$2600, climbing rapidly with extra-cost options to about \$3000. Of course, less expensive models are available in Ford's Econoline bus.

Height of the Club Wagon is 77.4 inches, width 75.8 inches, curb weight about 2750 pounds. Tread is 60 inches in front and 60.2 inches in rear.

The first impression of the Club Wagon body is one of spaciousness, which is born out by statistics. As with Greenbriar, it has large double doors on the curb side and in the rear, plus the usual front doors. Rear cargo doors measured 49.4x47.3 inches—considerably larger than either of the other buses.

While not as stylish as the Greenbriar, and not as tastefully appointed in the interior as the VW, the Club Wagon was the best-riding of the three—though slightly on the soft side. The seats are plush buckets in the front, making the cockpit unusually comfortable. Tracking was straight and firm, though not as good as the Greenbriar, in my opinion. Shifting was effortless. Acceleration was good—and felt better than the Greenbriar. Ford's engineers placed the Club Wagon's Falcon engine up front, smack between the two passengers. This placement robs the cockpit of an extra seat space and of course, is a potential source of both heat and noise. I would like to hastily add that this noise is only relative. Compared to most sedans, it is noisy. Compared to the VW, it is quiet. Compared to Greenbriar, it is boisterous.

I did not like the large false door on the glove-box. It covers twice the space actually necessary. The steering wheel seemed a little oversized, but there was plenty of leg room. Head room, too, was good—the best of the three. I could not find the figures for ground clearance, but it appeared to be better than Greenbriar's. Fuel-tank capacity is about 15 gallons.

VOLKSWAGEN DELUXE STATION WAGON: Don't let the name

fool you! It's really another bus. You can't help but notice the care and quality that goes into the Volkswagen machine. Body lines are dull, but finish is clean and professional. The interior is almost flawless, and points up a marked superiority over both Greenbriar and the Club Wagon. Seats are firm, and leg room in the rear, adequate. However, front cockpit space seemed restricted and cramped, compared to the two American models.

I tested the model that would compete with American buses, the Deluxe Station Wagon. Base price is about \$2775 for this four-cylinder air-cooled bus. Rated horsepower is 40, with engine in the rear. It is equipped with a four-speed transmission, which is the only one available, so far as I could tell. Tread is 53.9 inches in front, 53.5 inches in rear. Overall length is 169.3 inches, with a body width of 70.9 inches. There are double doors on the curb side, and a lift-up rear cargo door. Rear door opening is the smallest of the three buses, with measurements of 35.4x28.7 inches.

The first thing I noticed when I climbed into the driver's seat was the limited leg room. Windows did not roll down, but slid back about half-way in each door, horizontally. This seemed like a clumsy arrangement to me, a guy with long bony elbows. I couldn't find a comfortable place to rest my arm while driving.

Visibility was restricted by the low windshield. I found myself leaning forward to get a good look at the road. Gear shifting was more difficult than in the Ford, but about on a par with Greenbriar. Acceleration was totally and singularly disappointing



CHEVY

to one who is used to American cars. In Europe, the VW may be a hot machine—but over here, it is strictly an economy version of a family car. Drive-train noises in the Volkswagen were annoying, particularly the transmission which clattered and roared at me every time I went through the gears.

While the ride is firm and well-controlled, thanks mainly to torsion-bar suspension, tracking was poor. It required supreme concentration and constant vigilance to keep the VW from wandering into other traffic lanes. Perhaps at high speeds this tendency would improve—but at legal speeds, it was a real problem.

Frankly, I was amazed that a car of such apparent popularity was such an unexciting performer. Claims for fuel economy on the VW bus are often extravagant, though they may be true — providing you drive every-

where at 35 miles an hour! It's just impossible to whip 40 lone horses into anything like the Greenbriar or Club Wagon acceleration.

In conclusion, I can't help wondering why Volkswagen doesn't wake up to the fact that driving in America, on our super-fast roads, is far different than the plodding back-street maneuvers of the European cities. If they doubled the power of the Volkswagen, they would begin to meet our requirements, and I seriously doubt that economy would suffer too much. As of now, you appreciate the VW most when you pull into a service station. Gasoline savings are impressive.

Conversely, both Chevrolet and Ford should take a long hard look at the quality and workmanship that sticks out all over on the Volkswagen Deluxe Station Wagon. Such eye-appealing and handy items as chromed hand-rails throughout, excellent seat



FORD

upholstery, and carefully finished interiors make this foreign bus a real stand-out. Volkswagen's Westfalia model with the built-in camper is even more of a quality item, at about \$3400.

Whether you want ultimate economy, roominess, or style, the Greenbriar, Volkswagen, and Club Wagon among them offer a wide selection. For the big-family clan, or for the person who just likes lots of seating space, the new station buses will please you.

My thanks to the following dealers for providing the vehicles tested in the story: GREENBRIAR: Davies Chevrolet, Glendora, Calif. FALCON CLUB WAGON: Bisantz Ford, Glendora, Calif. VOLKSWAGEN DELUXE STATION WAGON: Harry Hill Volkswagen, West Covina, Calif. ///



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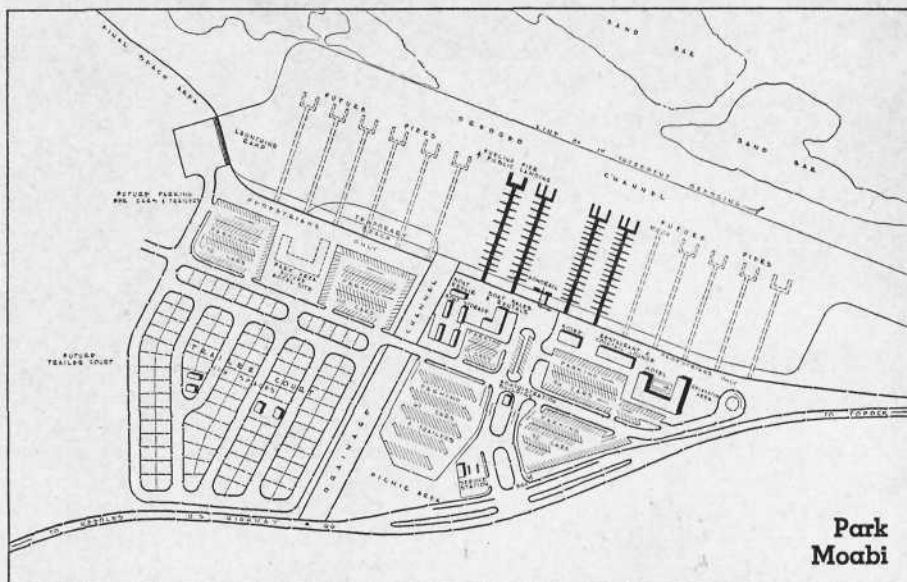
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By LUCILE WEIGHT



Park
Moabi

Marinaland on the Colorado

THE COLORADO RIVER, that great artery of the Southwest, is still fought over by Southwest States as the vital source of irrigation and power. The river as a boundary between Arizona and California is still unsettled. Squatters face ruin if back-rent collections are enforced.

But in the meantime, the river is enjoyed by thousands who do not feel directly involved in the turmoil. And in several places along the river below Hoover Dam, recreation development is progressing almost as if the battles were not raging.

In this category, attention now is focused on a triple development in the Needles area, just north of the mid-point between Davis Dam and Parker Dam. When Park Moabi, Needles City Marina Park and Park Lorado are completed, Needles will be the Marinaland of the Colorado. The first is scheduled to be open in the spring of 1962; work is well along on the second; and preliminary plans on the third are finished. Even more tremendous development in the northern part of this area is in the offing if leases on Indian lands can be settled.

Needles thus is destined to become a converging point for recreation seekers, rather than serving merely as a river crossing which has been its role since the West was young. As future generations enjoy swimming, boating, fishing, water-skiing and relaxing here, they may not know it, but they will owe much to a woman—Miss Magda Lawson of Needles.

If she was not a native daughter by birth, she has earned the title by her efforts on behalf of her long time home. During her terms in office as San Bernardino County Supervisor

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(she did not enter the last contest), her constant persistence, her appearance before civic and political bodies, were largely responsible for the shaping of Park Moabi, and she expended much effort on plans for Park Lorado and appeals for opening Indian lands for development which would benefit Indians—many of whom are needy—as well as the general public and business interests.

Getting a Colorado River park site set aside and a development completed is little less complicated than executing a treaty with a foreign

power. Bringing Park Moabi to its present status possibly involved even more agencies than such a treaty would require. Considering the offices, bureaus and departments involved (probably many of them never heard of by the ordinary citizen) it is remarkable that the opening is so near at hand, when the site was determined only in 1957.

This site, which has expanded as planning has developed and as need for recreational areas for boaters has boomed, is approximately nine miles south of Needles, and just north of the Topock bridge. It is beside U.S. Highway 66, and north-south Highway 95 merges with 66 in this area. In her enthusiasm for the future of the Needles river area, Miss Lawson has pointed out that it is closer to the Los Angeles Basin than is Lake Mead. This is a strategic advantage as she sees it, since almost three-quarters of Mead's 3½-million annual visitors are drawn from the Los Angeles section.

Another natural advantage has been cited by Jay Homan, chief of the county's advance planning division, under Neil B. Pfulb, county planning director. Its location between Davis and Parker dams is on a stretch of river unobstructed for 85 miles. "That's nearly 500 miles of shoreline enclosing more than 30,000 acres of water," he exclaims. This fact has led to the popularity of Needles' big annual event in September, the 14-year old Colorado River Marathon, usually a three-day event.

Park Moabi will be an area of intensive commercial recreation use. With some 350 acres leased from the government and with loans from the state, the county has invested in the basic work, and the concessionaire is to finish the development. The county will be reimbursed and in turn the lease payments and state loans paid, out of a percentage of the concessionaire's gross.

By November, 1961, the county had completed the dredging, filling, utility systems, streets, parking, launching ramps, piers and slips, and sanitary structures. Next, private enterprise will add a motel, general store, boat service and storage, auto service station, and a 120 unit trailer park. Ultimately the marina will accommodate 750 small boats and an average daily attendance of more than 2000 persons. Some have visualized a "dreamboat" for river excursions, fishing and moonlight parties.

The other county park, to be developed on the riverfront about three

miles north of Needles, will be on a 40 acre site. It too will be operated for the county by private enterprise. Park Lorado will include a motel, general store, service station, boat handling facilities and about 200 camping and trailer spaces. It will be accessible, says Planner Jay Ho-

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man, by a short road to be constructed from the existing River Road to the bank of the Colorado.

The city of Needles is moving fast in creating its own marina, which it hopes to have open by May, 1962. It has a long term lease on government land and was given other land by the Santa Fe railroad. Site clearing started in September, 1961. Private capital is to develop a marina, swim area with cabanas, clubhouse with dining room, cocktail lounge, coffee shop, a pro shop for a golf course, general store, a permanent trailer park, camp area and playgrounds for visitors of all ages. Only the trailer park is scheduled for later completion than next May. Location is on about 30 acres in the city, between the dike road and the Indian Village, and fronting on the river.

Needles people had to cut through some extra red tape, for originally their recreation department was under the school district. When it came to applying for a loan from the State Small Craft Harbors Commission, to hire a consultant for formal planning, a ruling made it necessary for the city to take over the recreation department. That same summer, 1959, the city levied a tax for recreation purposes, and planned to finance their golf course by four percent of a gross revenue tax on motels, hotels and trailer parks in the city. A private corporation was working on plans in 1961 for an elaborate development east and south of Needles, in addition to the city project.

Besides the marinas, development of almost 13,000 acres in Fort Mohave Indian Reservation north of Needles, where Nevada, Arizona and California converge, is a tremendous potential. Four bids from development corporations were opened in May, 1961, and these were sent to government and Indian officials for evaluation.

Oldtimers who remember drifting down the "silvery" Colorado, camping on river islands, landing on tule-bordered shores or cutting their way through mesquite jungle, may miss the wild beauty and stillness they once knew . . . when the water was disturbed only by the river current, or a leaping fish, plunge of kingfisher, or swimming beaver . . . or they may find partial substitutes in wildlife refuges left at some places along the river and in mountainous areas back from the river front.

But in line with current trends, more or less forced by population growth, river development will continue toward the comforts demanded

by moderns. The whole family can follow diverse pursuits, however rugged, yet spend nights in comfort at a riveredge motel or in their campers and trailers, with modern facilities provided.

And as they relax on the beach, at a cabana, or pause in their fishing or skiing at this modern Marinaland, they will still see the wonderful sunsets which thrilled others in an earlier day, as unnamed colors glow on cloudbanks over the Black Mountains or Arizona. *///*

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"SHOOTING" THE BLACK-TAILED RATTLESNAKE: Death may follow the bite of a six-foot rattlesnake in one minute if the victim is a rabbit; in two hours if a man. While the latter figure is an extreme, it does emphasize the fact that the large rattlers rank high among the dangerous animals of the world.

The Black-tailed Rattlesnake ("*Crotalus molossus molossus*") of the desert-bordered mountains from Texas along the border into Arizona, is one of North America's most spectacular rattlers. With its large blunt head, black tail, and dark olive-brown body marked with yellow-bordered rhombic blotches, it is an awe-inspiring sight.

Rattlers usually are found concealed under rocks or thornbushes. The specimen photographed above was encountered on a steep road in the mountains of southern Chihuahua. I unlimbered my camera equipment as quickly as possible, as the snake slithered backwards toward the edge of the road and a high earthen bank. When it reached this impediment it did not stop, but raised itself against the bank. It remained there, alert and deadly, in a perfect pose. Usually one must "shoot" a snake from above. But here I could get on the same level as the snake.

To take full advantage of the opportunity, I set the camera on a tripod, stuck my head under the black focusing cloth, and began moving closer to the snake in order to get it in sharp focus and the proper size on the ground glass. At this point let me warn all would-be snake photographers against this practice. Sighting through the ground-glass, you cannot tell how close you are to your subject. And when your subject is a large rattler armed with a half-dozen lethal doses of one of the most potent of snake venoms, this is something to consider.

—GEORGE BRADT

do YOU have

By JOE PALMISANO

AS I ROSE to leave, the old man said. "Be careful. There are many rattlesnakes on the hill where you are camped."

For two hours the old Mexican turtle-fisherman and I had been squatting on our heels, native fashion, and chatting about the things that had happened since I had seen him last. Out in the bay one of his sons was getting the boats ready for the next day's fishing. And on the beach nearby his very young grandson was playing at spear-throwing, the game which would someday become his means of livelihood.

"My cat," the old man went on, "has pretty well driven *los crotalos* away from my camp." He indicated a yellow-eyed ball of black fur nearby engaged in mock battle with a large, equally-black dog.

"When he finds one he teases it until it is tired, then he kills it. But on the east side of the hill and up on top, where you have your truck, the vipers are very plentiful."

"Thank you for the warning," I smiled. "Perhaps we should rent your very useful cat while we are here."

The joke did not mean, however, that I was inclined to take his advice lightly. Past experience had taught me that my friend was not prone to exaggeration. When he said it was best to *tener cuidado* about something, that was exactly what I intended to do: be careful. My wife and I bid our friend good night and returned along the trail to our own camp, carefully watching the ground in the gathering darkness.

By the next afternoon it was clear that he had not mis-represented the situation. Betty moved one of our camp chairs and found a sidewinder coiled comfortably in its shade. Two hours later, while on my way to return a borrowed fishing lure, I met a second rattler on the trail, this one the reddish variety with black-and-white tail bands which is common on the Baja California peninsula. And that same afternoon another American sportsman returning to camp from surf-fishing encountered still a third rattler while crossing our



PALMISANO HOLDS A VISITOR TO HIS CAMP

hilltop. We had chosen our campsite for its cool breezes and fine view—but quite obviously it had its disadvantages, too.

Now, if you are a desert devotee,

an emergency plan for snakebite?

as I assume most readers of this will be, chances are you have had experiences similar to the one I described. I have had many. It is impossible to tramp the desert for very long without having some "near misses" with the buzztails. If you are like me, however, you probably react to the encounter much the way a motorist reacts to the sight of a bad auto accident. He is somewhat shaken by the grim reminder of what could happen to him. He resolves to slow down and keep his eyes on the road, and indeed he does—for the next five miles. By then he has pushed the experience to the back of his mind, where it will cause him no uneasiness, and he returns to his usual careless habits.

Perhaps when you came within inches of stepping on that sidewinder you, too, resolved to be more careful hereafter — to buy better boots, to

watch your step, to carry the snakebite kit instead of leaving it in camp. But soon the sense of alarm passed away, and with it the well-meant resolutions.

Can one afford this complacency? Let us examine the possibilities.

Most First Aid advice on snakebite is just that—"first aid." It assumes that the victim can be rushed to a physician or a hospital within an hour or two. It implies a world of rapid radio and telephone communication, a race along paved highways with sirens wailing, or even a spectacular rescue by helicopter.

But suppose your rattlesnake is not so considerate as to bite you within easy access of professional medical aid? The first 48 hours are critical. Suppose he bites you or a member of your party while you are stranded

Text continues on next page

A SNAKE'S LIFE HISTORY: Snakes may either be born alive (viviparously) or as eggs (oviparously). More North American snakes produce living young than eggs. Among the egg-laying species are the bull, gopher, whip, racers, king, milk, rat and coral snakes. Live-bearing species include the rattle, copperhead, moccasin, garter and water snakes.

The probable life history of the 12-inch baby Green Rock Rattler coiled so neatly in the photograph is typical of the sequence of events in the existence of viviparous species. I say "probable" because the snake in the picture now resides in a bottle of alcohol at the American Museum of Natural History.

The little rattler was born probably late in September along with three other eight-inch babies. It was born alive, though encased in a thin transparent membrane. It broke this envelope almost immediately and wriggled away from its disinterested mother and brothers. It was well equipped to do this since its tiny fangs held more than enough poison to kill the small mice it would hunt, and even enough to make a man seriously ill.

When born it had no rattle on its little tail—merely a delicate "pre-button." But within two weeks it would have shed for the first time, and acquired the beginning of a true rattle. This beginning—the button—is visible in the photograph. Hereafter each shedding would produce a new rattle segment. But rattle or no, the baby snake would vibrate its tail when nervous or angry.

The snakeling was found sunning itself on a warm rock late in the fall. Had it not been discovered it would have missed both immortalization in DESERT and preservation in a museum. It would have sunned less and less as winter approached. Before night

temperatures reached freezing, it would have been safely below ground, hibernating the winter away. Like all other hibernating things, the snake would need no sustenance until spring. Then the sun would warm the ground and lure the snake out to hunt small rodents. All summer it would hunt and sun, and change its skin every few months.

By the time the rattler was two years old, it would have measured about 16 inches; by full maturity it



would have reached about two feet—average length for this species. After its third winter's sleep, it would have sought a mate.

If the little rattler had been fortunate enough to evade man, it might have lived a dozen years. But, even had I not found this little fellow, it is quite probable that before dying of old age, it would have had occasion to rattle in man's presence — thereby saving the man's life and assuring the end of its own.

—GEORGE BRADT

Snakebite Plan

(continued)

with car trouble in some isolated desert canyon? Or in Baja California or other remote parts of Mexico where, even with the best of luck, you could not hope to reach a hospital for several days, perhaps a week? Can you afford complacency then?

I think not. The desert traveler who goes into remote areas owes it to himself and his companions to carefully think out exactly what course of action he will take should snakebite occur under the conditions I have described. He should rehearse in his mind every detail of how he would cope with the emergency.

One does not think clearly under stress; only forethought and planning will assure wise action. This fact is the basis for centuries of military drill, for school fire drills, for abandon-ship drills at sea. Why not for rattlesnake drills?

Any realistic plan of action for such an emergency must assume only an average layman's knowledge—that is, no special medical skill or training—and equipment which the ordinary desert camper might be expected to take with him. Within these limits, what effective methods of snakebite treatment are available?

Here are the conclusions reached by one layman, myself, after questioning physicians and pharmacists and doing fairly extensive reading on the subject. Perhaps my remarks will

serve the useful purpose of stimulating you to plan, *in detail*, what you would do should one of those close calls become an actual snakebite.

Once a rattlesnake has injected venom into his victim's body tissues, there are three ways of attempting to cope with it:

1. Remove it.
2. Slow down its action and spread.
3. Neutralize it.

Familiar to everyone—at least in principle—is the “cut - and - suck” method of treatment. From time to time we see the hero of some television Western bitten by a rattlesnake. His trusty sidekick takes out his bowie knife (with which he has just finished skinning a buffalo), slashes the uncomplaining hero, and sucks out the poison. In the next scene the hero gets up, nods his thanks, dusts off his buckskins, and goes about his business as if nothing had happened.

Unfortunately it is not that simple. The prevailing medical opinion seems to be that suction, especially mouth suction, is not very effective treatment. Suction cups or other devices which can exert a strong steady pull are somewhat better. Suction should be continued at the site of the fang marks for a half hour or more. And if this is to be the only method of treatment, further incisions and more suction must be applied as the venom travels up through the bitten leg or arm.

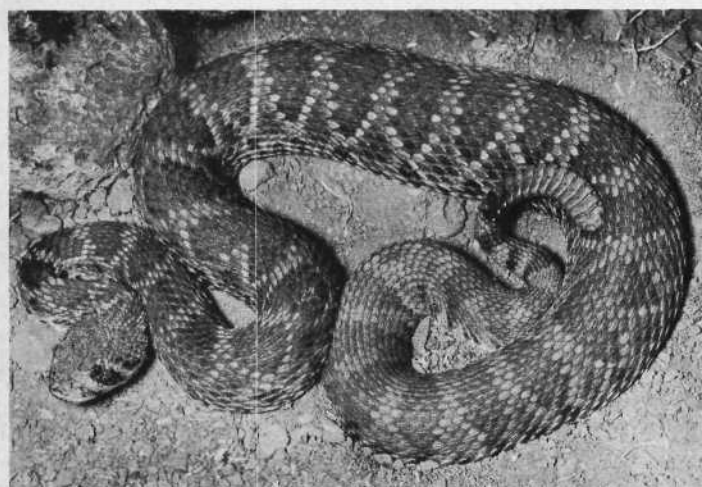
The instructions with one snakebite kit state that 50 to 120 incisions

are “not unusual.” The discomfort for the victim, not to mention the chance for infection when this is done in the field, seems quite obvious.

Despite these drawbacks, incision-suction does have some advantages. For one thing, it can be applied immediately, even if there is no emergency equipment except a knife. If it is applied immediately, some of the venom can be removed while it is still concentrated in a small area; this may mean the difference between life and death for the victim.

Suction-type snakebite kits are small, inexpensive, and easy to carry. The rockhound or desert hiker is much more likely to have one of these in his pocket than the more elaborate types of equipment. My wife and I own two of the Cutter kits. These are only three inches long and an inch in diameter; yet they each include a small lance, antiseptic, a cord for constriction, three suction cups, and a set of instructions. On desert trips we carry these kits with us *at all times*.

During recent years, cryotherapy, or treatment by cold, has gained much favor in cases of snakebite or scorpion sting. Dr. Herbert L. Stahnke of Tempe, Arizona, has been a leading figure in the development and popularization of this method. Simply stated, cryotherapy is based upon the principle that lowering the temperature of the bitten area will slow down the effects and spread of the venom and bacteria injected, so that the body's natural defenses can deal with them. Writing in *The American*



BY ITS TAIL SHALL YOU KNOW IT: The rattler's rattle is its most distinctive feature. Other snakes have poison fangs, but none a rattle. This remarkable appendage identifies the rattlesnake—whether it is a seven-foot Diamondback or a 24-inch Willard's Rattler.

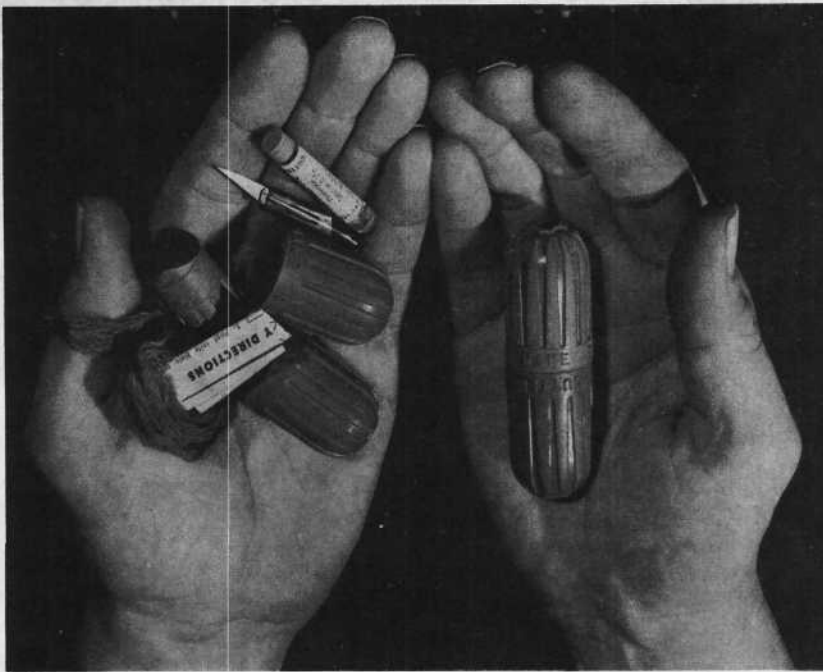
The uniqueness of the rattle makes it understandable why it has attracted so much interest—and has

given rise to so many false beliefs. Its possible use to the snake has been the concern of herpetologists for years. While it has been held that the rattle is used as a conscious warning on the part of the snake as to the danger of approaching its venom-laden fangs, and even that it is used to attract a mate, it is now believed that it is simply a warning to anything which might unknowingly harm the snake by stepping on it. When the rattlesnake rattles it is merely reacting to fear or annoyance in the way many other snakes do—by vibrating its tail. That it does not make its buzzing sound—so unnerving to humans—to lure a mate to its scaly side is obvious when we learn that a rattlesnake is totally deaf!

The principal misconception about the rattle is the claim that a rattlesnake's age can be determined by counting the number of rattle segments. This is quite untrue. A rattlesnake not only gets a new segment each time it sheds its skin—which occurs three or four or more times a year—but in addition loses segments by wear and accidents.

The snake depicted on this page, a 3½-foot Mojave Rattlesnake (“*Crotalus scutulatus scutulatus*”), actually has an exceptionally long rattle—14 segments.

—GEORGE BRADT



CUTTER INCISION-SUCTION SNAKEBITE KIT

Journal of Tropical Medicine and Hygiene, Dr. Stahnke explains:

Venom action is chemical action. For every 10° C. rise in temperature, chemical activity is doubled; the converse is likewise true. A hand kept in iced-water will have its temperature dropped from normal body temperature of 37° C. to about 4-7° C. Consequently, the chemical activity at the site of injection is practically nil.

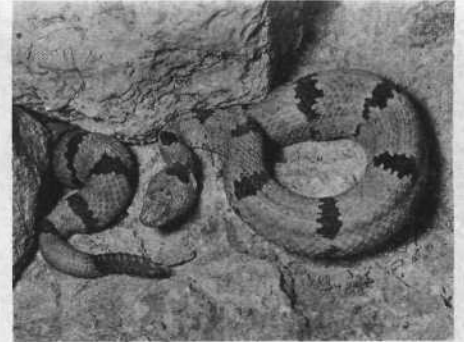
Another advantage of the method is that cold will act as an anesthetic and reduce the victim's pain.

For the camper in an isolated desert area, of course, the means of producing cold is a problem. Depending

upon the size of the victim and the rattlesnake, a bitten area would have to be kept at low temperature for a period of from six to 20 hours. However, the problem is not an impossible one. If you consider the equipment you do have—or can acquire—for your trips, you may find that there is a surprising number of ways to produce cold.

If you have been out only a short time when the bite occurs, you may still have plenty of ice and cold water in your camp icebox. There are a few desert areas, such as those below the east slope of California's Sierra Nevada, where snow-fed streams flow ice-cold even in summer. Ethyl chloride can be purchased at your drug-

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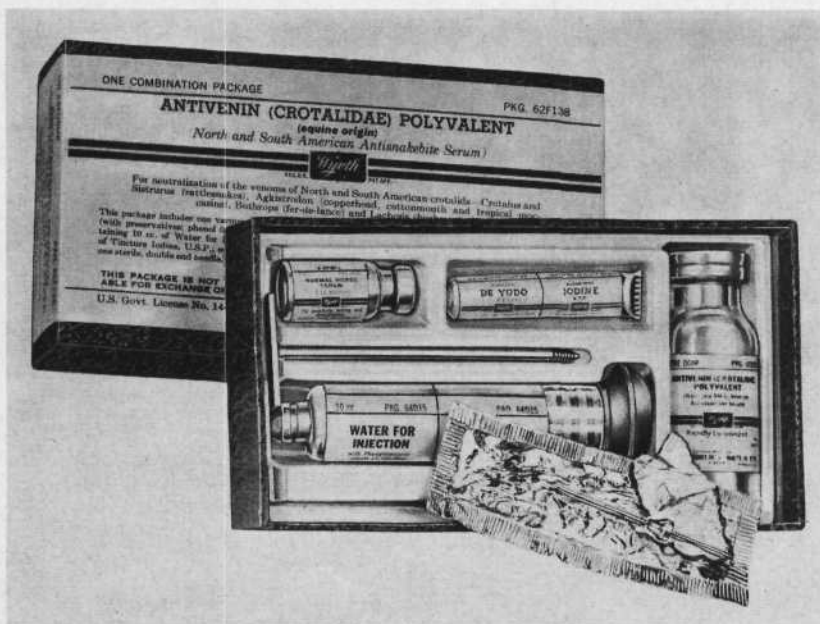
DON'T TREAD ON ME: The venom of the Green Rock Rattlesnake ("Crotalus lepidus klauberi"), pictured above, is one of the most potent of all the dangerous rattlesnake poisons. But because of this snake's relative small size, and its preference for rocky unfrequented situations in the arid mountains of southeastern Arizona, western New Mexico, and the area around El Paso, it has as far as I know no fatalities to its credit—yet.

Although harmless if swallowed, rattlesnake venom can cause speedy death if injected into the flesh or blood stream in lethal doses. It attacks the nerve centers controlling breathing and heart action, destroys red blood cells, and causes alarming swelling and discoloration of the afflicted parts. To employ its venom effectively, the rattlesnake is equipped with a highly efficient system of hypodermic needles and syringes. Two glands, located on either side of the head behind the eyes, manufacture and store the poison, two hollow needle-sharp fangs puncture the luckless victim's flesh, and special muscles force the venom through the fangs and into the victim at the precise moment of the strike.

In some of the largest specimens, the fangs may be an inch long, the amount of poison in the glands enough to kill nine men, and the strike itself too fast for the eye to follow.

Primary use of snake venom is in securing food, and only secondarily as a defensive measure. The venom assures the death of the victim before it gets too far away.

While a snake's potential danger increases proportionally with its size — because of increased striking range, aggressiveness, and amount of poison — the venom of smaller species may be of higher toxicity. The bite of a two-foot coral snake may kill as quickly as that of a rattlesnake three times its length and 10 times its weight. So: know your snakes, watch where you place hands and feet, stay six feet from the poisonous ones (American snakes do not chase people), and there will be slight danger of ever being bitten. —GEORGE BRADT



WYETH ANTIVENOM FIELD KIT

Snakebite Plan

(continued)

store in compact 40-gram metal cylinders which can be carried in the pocket. One of these cylinders, used carefully as directed, will keep the bitten area cold for about a half hour. (Metal cylinders of ethyl chloride are also available in 100-gram size.)

And remember that any other liquefied gas absorbs heat, and thus produces cold, when it is allowed to escape into a gaseous form again. Thus a carbon dioxide fire extinguisher or the butane tank on your trailer or camper can be used. Disconnecting the butane tank will take some time, so it would be well to have at least one of the ethyl chloride cylinders in your First Aid kit to use in the meantime.

If you use a liquefied gas to spray the area around a bite, certain precautions are necessary. Do not freeze the area; this may do serious damage. Spray the gas in short bursts, and stop as soon as frosting occurs on the surface. During World War II many sailors discovered—much to the consternation of their officers—that a carbon dioxide fire extinguisher would chill bottled or canned beverages almost instantly, and would freeze them in a matter of seconds. So be careful.

Also, if you use butane, propane, or any other inflammable gas, it is obvious that you must provide plenty of ventilation and be extremely cautious about fire. An exploding butane tank would end your snakebite worries forever.

Carbon dioxide has the advantage of being an inert non-inflammable

gas. Some other compressed gases might have an irritating or otherwise undesirable effect if the skin is exposed to them repeatedly over a long period of time. However, in such a dire emergency that would be a chance well worth taking.

Any decrease in temperature will help somewhat. For lack of anything better, you might use the refrigeration-type air conditioner in your car to keep the bitten area cold. Expose the bite to the stream of cold air at close range. A thin cloth wrapped lightly over the affected area and kept constantly damp would probably increase the effectiveness of the cold air stream.

Whatever means of cryotherapy is used, remember that the victim himself must be kept warm. Only the area around the bite must be kept as cold as possible, short of freezing.

Most campers assume that antivenom, or serum to neutralize the effects of a snakebite, must be administered in a hospital. However, this is no longer true. Antivenom is now available in a powdered form which is very stable under field conditions. Its effectiveness is assured for at least five years; and in laboratory tests it was found not to lose its potency even after storage for ten years at temperatures up to 104° F. The powdered serum is reconstituted, i.e., re-mixed, with distilled water at the time of treatment; it must be used within a short time after reconstitution, or it will deteriorate.

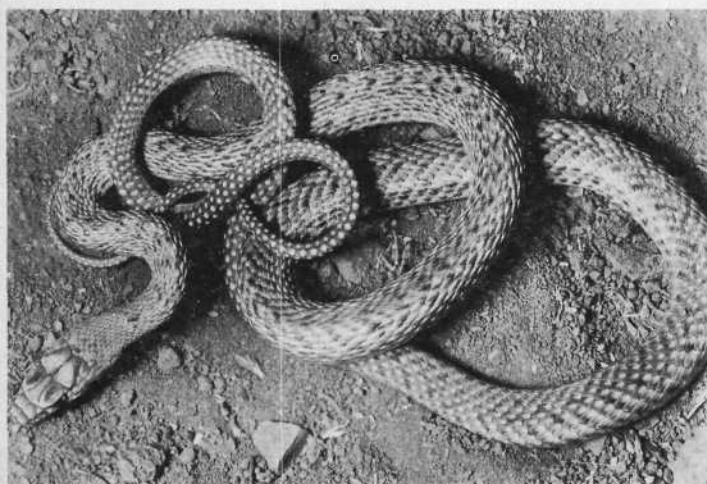
A field kit is now available which includes the powdered serum, iodine, a hypodermic syringe containing the necessary distilled water, and detailed instructions for its use in both English and Spanish. The kit I own was manufactured by Wyeth Laboratories, Inc., and costs about \$12. That is very cheap considering that

it represents at least five years of rattlesnake insurance. The kit, designed for emergency treatment, includes only 10 cc. of serum; in a hospital five times that amount, or more, might be administered. Therefore the back-country explorer may want to take along extra units of the dried serum and distilled water. The pharmaceutical name of the serum is *Antivenin (Crotalidae) Polyvalent*.

If you have your pharmacist get one of these antivenom kits for you, study the instructions carefully and make sure you understand them thoroughly. If you are in doubt about any of the details—for example the matter of allergy to horse serums—consult your physician. He and your pharmacist can help you prepare yourself to use the kit in an emergency. Re-read the instructions periodically and drill yourself in carrying them out. Don't wait until the advent of a snakebite, when time is short and clear thinking is difficult.

If you set about trying to learn what you can about snakebite treatment, you will find, as I did, that the literature is frequently contradictory. Some will say to apply a ligature or tight tourniquet above the bite; others will say only light constriction should be applied. One source will imply that incision-suction alone is adequate treatment; another will state that it is practically worthless. Dr. Stahnke's cryotherapy treatment is questioned by some medical men. And there are many other disagreements in detail—all of which tend to cause confusion and doubt in the layman's mind.

However, some disagreement—even among authorities—is understandable. As a physician pointed out to me, no single researcher has the opportunity to deal with enough actual cases of snakebite to constitute what sci-



BUT, NOT ALL SNAKES ARE POISONOUS: The Coachwhip Snake pictured on this page, along with their close relatives the Racers, are large, active, courageous and quite harmless to man. Some grow to be six or more feet long, and they can travel with astonishing alacrity over sand, rocks and even bushes.

I tried to pick up a cornered one, and it lunged at me with far more ferocity than displayed by even the larger rattlers.

Man's hand has been raised against all snakes, good and bad alike, since it was commanded of the first one, "upon thy belly shalt thou go . . ." Few animals have had so much hatred vent on them.

Remember: every time a harmless snake is killed by man, a food competitor of a rattlesnake is removed.

—GEORGE BRADT

entists call a "controlled experiment," and to arrive at statistical conclusions. No one is likely ever to assemble 10,000 willing human subjects in a laboratory to be bitten by rattlesnakes, even for the sake of scientific advancement.

Even so, I think the average desert camper can come up with a practical, effective plan for extended treatment in the field.

Here is my plan. Yours may vary, depending upon your equipment, habits, and other details.

Assuming a member of my party was bitten on the ankle, let us say, a mile from camp, I would take the following steps:

1. Apply constriction above the bite immediately. Keep the victim quiet and in the shade if possible.
2. Make small incisions through the fang marks, being careful not to cut blood vessels or tendons. Apply suction cups. Loosen the constricting cord for one minute out of every 10 or 15.
3. While the victim continues self-application of the suction cups, make a quick round trip to camp for ethyl chloride cylinders and the help of any other persons there.
4. Upon return to the victim, discontinue suction and chill the area around the bite. Remove the constrictor.
5. Continuing cryotherapy with the ethyl chloride, return the victim to camp with as little exertion on his part as possible. (Exertion speeds the spread of the venom and bacteria.)
6. Make the victim as comfortable as possible. *Give no alcoholic stimulants.* Remove the butane tank from camper and continue cryotherapy with this after the ethyl chloride is exhausted. (Remember, iced-water is best if you have ice available.)
7. Use the antivenom kit as directed. Give additional injections at one-hour intervals if more antivenom is available.
8. When civilization is reached, take the victim to a hospital for further treatment.

Recently I was discussing the problem of snakebite with Senora Anita Espinoza, a resident of El Rosario who is well-known to American travelers in Baja California. She told me sadly of a small boy who, a short time before, had been bitten on the foot while playing in the arroyo and had died within a few hours.

"But a man who was bitten recently was much luckier," she said. "He was cutting firewood when a rattlesnake bit him on the finger. Right away he took his machete and cut off the finger."

Effective treatment, but a bit drastic. Let us hope that you and I, with some planning and forethought, can provide wilderness snakebite treatment which is somewhat less primitive. ///

★ POEM ★ OF ★ THE ★ MONTH ★



OCOTILLO
BLOOMS

On the canyon's rim,
Gangling, slim
Ocotillo wands
Lift spidery fronds,
Each scraggly bough
Tipped somehow
With one small absurd
Vermilion bird.

By ETHEL JACOBSON
Fullerton, Calif.

You are invited to submit your poetry to Desert's monthly contests. Only one theme subject is considered: the desert; and all

entries should be accompanied by a stamped, addressed return envelope. Mail your poems to: Poetry Contest, Desert Magazine, Palm Desert, Calif.



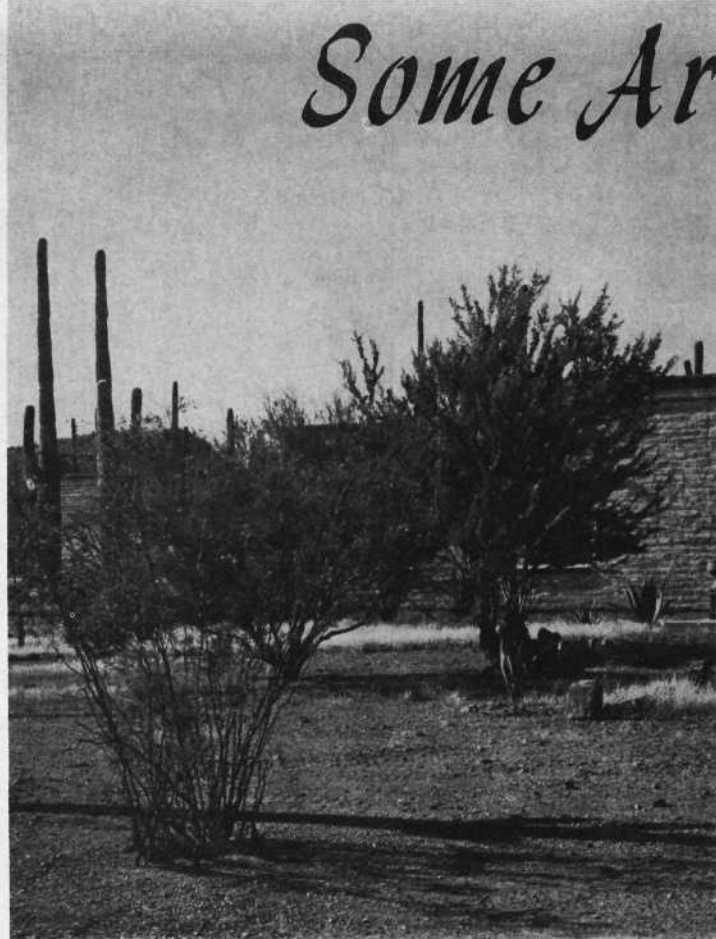
PIONEERS BUILT THEIR HOMES WITH WHATEVER MATERIAL WAS AVAILABLE. THIS LOG CABIN STANDS IN TIMBERED NORTHERN ARIZONA.



STONE HOUSES ARE RARE IN ARIZONA. ROOF IS SHINGLE-PAPER.



THE TREE-TRUNK LIGHT POST ADDS A RANCH TOUCH TO THIS ADOBE.



ALTHOUGH THE MAJORITY of early homes in Arizona were made of adobe, they weren't all made of mud! Pioneers built with the materials close at hand, and in the timbered northern part of the state you can still see some bona fide log cabins.

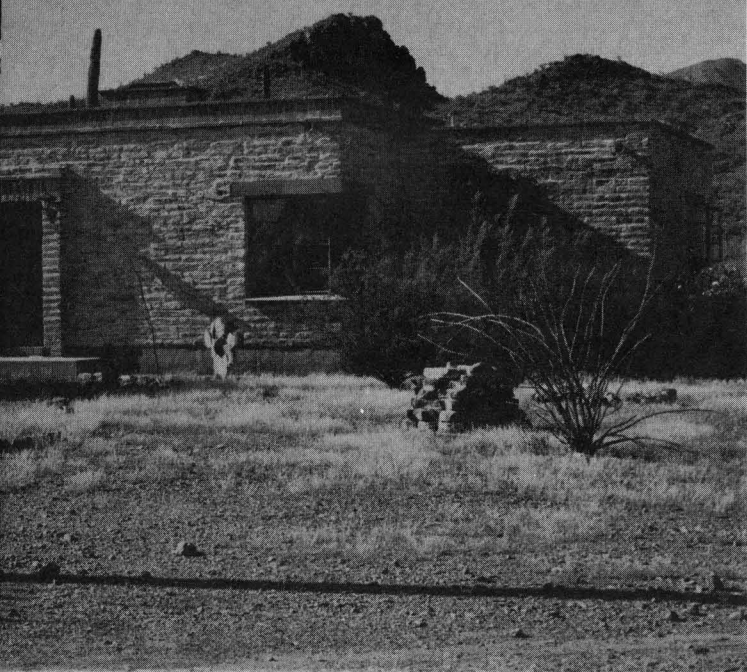
Stone as a building material has been used in all ages. The most common varieties that go into man-made structures are granite, limestone, sandstone, slate and flagstone. Arizona has considerable amounts of these raw materials, and a bit of scouting around the countryside will reveal quite a few stone houses. Yet, we rarely think of stone houses as being typical of the Southwest.

Sometimes these Arizona stone houses have tarpaper roofs; even sod has been used. I've seen stone houses with half a roof of paper, and half of sod, as if the builder either ran out of material or wanted to test which type of roof would prove most practical in the unique conditions imposed by the desert climate.

Frame houses were relatively rare in pioneer Arizona. (The lumber supply was low, the fire hazard high.) In some cases, these crude little structures were given no foundation—in fact, there are some still standing that were built with air space between ground and floor.

Occasionally one finds a frame house with a slate roof; quite a novelty in this country. Slate is strong, tough and impervious to water—but roofs that leak are not too much of a problem where rain is a stranger.

Arizona Homes



LEFT: SILVERBELL RANCH HOUSE IS BUILT OF ADOBE BRICK. ABOVE: A SLATE ROOF MAKES THIS HOUSE UNIQUE IN RAIN-SCARCE ARIZONA.

Because so many early Arizona homes were made of baked mud, or adobe, scores of them still stand. Adobe is Southwest. Adobe homes are indigenous.

Not many old adobes are vacant. Many a young couple, on the look-out for an inexpensive home, has taken over an old adobe shack, and with very little cash outlay, revamped it into a liveable and charming home.

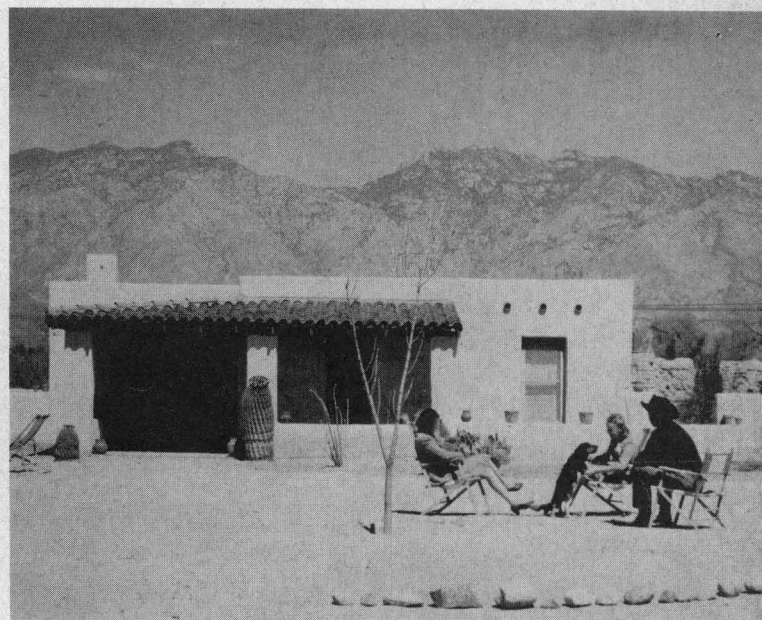
Sometimes the adobe is left in its natural state; sometimes it is stuccoed. But whatever face-lifting the adobe is given, the new owners know the house has stood all these years and chances are good it will stand for many more. Such homes often have a maximum of atmosphere.

Of the many new houses that are being built in Arizona today, the tendency is toward adobe, adobe-masked-with-stucco, or either plain or stuccoed brick. Sometimes the bricks are carefully laid, sometimes casually in the "Mexican style."

Most of the new homes are constructed along simple lines, often with a flat roof. They may have generous-sized porches or terraces, or do-it-yourself ramadas covered over with palm fronds or beargrass.

Actually, there isn't any set rule for home building in this area, and perhaps this is the chief reason desert homes are so interesting to people who come to the Southwest from distant places.—LOUISE PRICE BELL

///



THIS ADOBE WAS GIVEN A STUCCO FACE-LIFTING, TILE OVERHANG.



COLORFUL MURAL ON THE WALL, PALM FROND RAMADA, ADD CHARM

The men listed at the top of these pages are the pioneers of boat travel down the Colorado River's whitewater canyons. By being the first to float the calm water and fight the rapids, they

have earned respected place with the exception of the as familiar to students of relatives and close friends

The exploits of the appeared in print practical

1869

J. W. POWELL
G. Y. Bradley
A. Hall
W. R. Hawkins
W. H. Powell
J. C. Sumner

1890

R. B. STANTON
H. G. Ballard
W. H. Edwards
L. Gibson
J. Hislop
E. Kane
R. Travers

1896

G. FLAVEL
R. Montes



Who Was Elías B

Ríverrunner to Trav

places in Western history. Their names—1903 party: Woolley, King, Sanger—are the Colorado River as are the names of

one-armed Powell and the others have ally from the time these men hoisted their

boats out of the river. Not so with Woolley and his two companions. Their adventure was brought to light only in recent years; and to this day practically nothing is known of the man who led the fifth traverse of the wild and dangerous river.

If you can shed some light on Woolley or his descendants, please contact this publication.

1897

N. T. GALLOWAY
W. C. Richmond

1903

E. B. WOOLLEY
J. A. King
A. R. Sanger

1908

C. S. RUSSELL
E. R. Monett

By P. T. REILLY

HISTORY IS SOMETIMES adjusted as new detail is presented, and man's record on the Colorado River is no exception. In the books that have been written on the running of the Colorado, the fifth complete traverse of Marble and Grand Canyons has been credited to Charles S. Russell and Edwin R. Monett, in 1908. Now it appears that the Russell-Monett trip should be number six, and that number five was made by a previously unpublicized party in 1903.

No attempt was made to hide the record of this passage. On the contrary, a considerable number of people were told about the traverse, but for nearly half a century no one listened.

Late in 1951 while attending a regular Thursday meeting of the Los Angeles Adventurers' Club, I was introduced by Frank Birch to an old gentleman named Arthur Sanger. Birch remarked that I had run the Colorado River. As we shook hands, Sanger said, "You did? Why, I did that back in 1903."

My curiosity was immediately aroused. As a student of Colorado River history, I thought I knew the names of practically everyone who had made this trip—and remember, that elite roster did not number 100 individuals until 1949.

Immediately I deduced that chance had possibly brought me into contact with a member of a previously unrecorded traverse.

I poured forth questions, and the simplicity and directness with which Sanger answered them was convincing—

Text continued on next page

B. Woolley, Fifth Traverse the Colorado?

WOOLLEY

(continued)

even when he could not give complete answers. Forty-eight years is a long time.

Yes, he had kept a journal of the voyage and thought he could find it.

Pictures? Yes, he had taken some pictures on the trip, although most of the glass plates had been ruined in the rapids. He thought he might be able to find prints from the surviving plates.

Place-names between Lee's Ferry and Needles meant nothing to him. Sanger said ruefully, "They didn't have names in those days." Obviously he had read nothing on the subject and wasn't even sure of the geography.

While his story had some gaps, it also made sense, and the sincerity of Arthur Sanger was very evident. He could be mistaken but was not concocting. The job at hand was to ascertain if he had been where he thought he had been.

A few days later, Arthur Sanger found his diary and the only two pictures that remained from the trip. We discussed the journey in detail under conditions more favorable than at the bustling club. After having told people of his river experience for nearly 50 years, he was mildly surprised to encounter someone who expressed more than polite interest. I took great care not to put words in his mouth or to inform him of the

relative position of places and thus influence the reconstruction of his adventure.

My next step was to contact Otis "Dock" Marston of Berkeley. For years Dock had been amassing records of the Colorado River and of those who had appeared in its environment. If this trip had been a matter of record, Dock would know about it.

I drew a blank. The personnel of the trip was unknown to Marston, but he expressed great interest and contributed important confirmation of the traverse itself. In 1949 Dock was a member of the crew of the ESMERALDA II which was soon to write river history by making the first power run of Marble and Grand canyons. Several days were spent at Lee's Ferry in June of that year and during this period, Dock discussed

river history with long-time resident, Jerry Johnson.

Jerry was one of the sons of Warren M. Johnson who took over operation of the ferry for the Mormon Church from the widow of John D. Lee in 1877. Jerry had spent most of his life at the mouth of the Paria and was eye-witness to the traffic on the river. Lee's Ferry was more than an historic river crossing; from the time of Powell, it was starting or finishing point, supply and lay-over point for river parties.

Marston related how Jerry Johnson told him that sometime after Stanton (1890), three miners came to Lee's Ferry, built a boat and set off downstream. He didn't remember the exact year, the names of the men or whether they got through.

The important point was that Johnson had volunteered this information to Marston long before I had stumbled across the 1903 traverse.

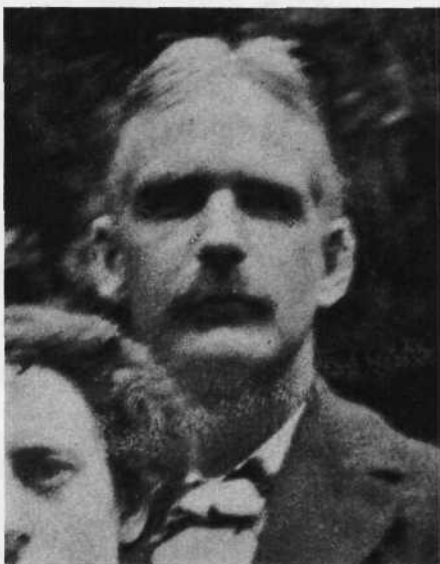
Sanger met with Marston and me in January, 1952. Many years had passed and Sanger could provide only a general verbal fill-in to augment his journal. He was, however, able to relate incidents which made sense to experienced river men. There remained a couple of geographical errors, and there were mysterious ramifications concerning the trip itself that Arthur had never solved.

Sanger departed for home at a late hour, and Dock and I concurred that a missing chapter of Colorado River history had been uncovered.

Dock returned to Berkeley, and both he and I plunged into researching the unknown phases of the story. Repeated visits to Arthur's home resulted in the gathering of detail not considered important by the old man, but very important to the story.

WHEN THE 1903 trip was conceived, Arthur Sanger was a young man of 23 years. He lived with his family in a boarding house located at 460 S. Grand Ave. in Los Angeles. His father was retired on a good income, and the family did considerable traveling. The Sangers occupied the entire main floor of the large house which was owned by an eccentric woman known to them as Madam Shell. She was the owner of the Maraquitta Lode, a gold mine a short distance north of Quartzsite, Arizona.

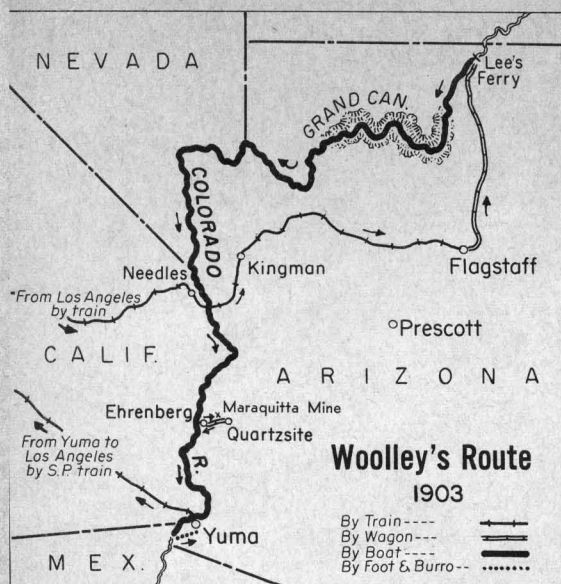
In the summer of 1903 an associate of Madam Shell, Elias B. "Hum" Woolley, began construction of an odd-looking rowboat in the backyard



JOHN KING IN 1895



ARTHUR SANGER . . . IN 1904 AND IN 1961



of the house on Grand Avenue. The boat was 18 feet long and had a 50-inch beam. It had oak ribs four inches apart. Each end was decked over for about five feet, and a water-tight hatch gave access to each end-compartment. The boat was open for eight feet amidships. The bottom was flat, and curved up at each end eight to ten inches.

As the boat was being constructed, John A. King, an older cousin of Arthur Sanger, visited the family and observed the project. King got acquainted with Woolley and soon was participating in the work on the

boat. By the time the job was completed, King had agreed to join Woolley on the trip in which the boat was to be used. It is not known who proposed the merger.

Near the last of the construction, Arthur was asked to join the party. Having nothing else to do at the time, he eagerly accepted. It is obvious that Sanger's function was that of helper.

Ostensibly, the purpose of the trip was to perform the assessment work on the Maraquitta claim for Madam Shell. She provided the cost of the journey. Young Sanger was not enlightened with minor details. He was told that the only way to reach the Maraquitta was to transport the boat to Lee's Ferry, float down the Colorado River to Ehrenberg and go inland to the claim. It is probable that Woolley, King and Madam Shell wanted to prospect the Grand Canyon, and saw no reason to explain the choice of this devious route to Sanger.

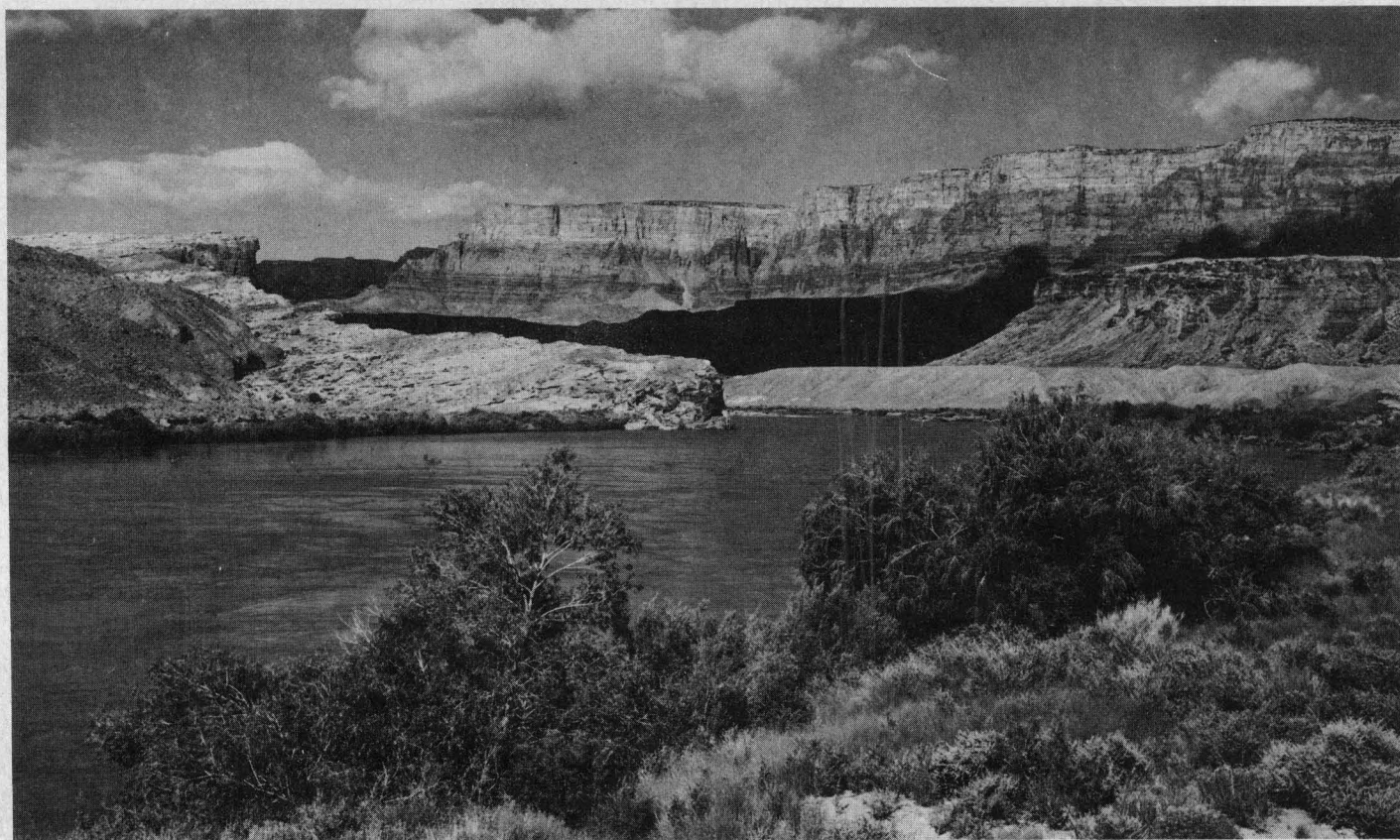
Arthur was told that Hum Woolley was a prospector and an experienced riverman who had made previous trips on the Colorado. However, there is no record to indicate this is true. Arthur remembers Woolley as being about 40 years old at the time, but qualifies his judgement by saying that "Woolley's age was hard to guess."

In any event, Woolley designed the boat and did most of its construction; he planned the trip and made all the arrangements; he acted as boatman and performed as an experienced leader.

As it turned out, Woolley's ability to adjust to the savage conditions of the environment undoubtedly saved their lives.

The boat was completed early in August, 1903. It was disassembled, packed for shipping and sent by train to Flagstaff. Woolley, King and Sanger arrived at Flagstaff about a week later, also by train. Here supplies for a month were assembled. An Indian with a wagon and a wild team was paid \$50 to haul the men and their outfit to Lee's Ferry. They left Flagstaff August 18, 1903. Arthur's journal relates that their objective was reached after "... a terrible five-day hot trip ... across a forsaken country."

It is likely they followed the old Mormon Road and arrived at the Colorado at the ferry crossing. Arthur gave a good verbal description of the old dugway. They could not get the attention of the people on the Paria side of the river, so they camped the first night on the left bank. About mid-morning of the second day Woolley built a large fire and the ferryman was thus alerted that busi-



LEE'S FERRY, WHERE THE 1903 VOYAGE BEGAN

WOOLLEY

(continued)

ness was waiting on the opposite shore.

The boat was re-assembled on the right bank during the last days of August. Arthur remembers that they obtained fresh vegetables from the families who lived in the mouth of Paria Canyon. Occasionally, members of these families wandered down to the river to observe the work on the boat. When the planks were all screwed in place, the boat was calked by stuffing small cotton rope into the cracks, and paint was applied. No pictures of the boat are available and

Arthur's memory is hazy on some of its detail, but he remembers that the calking took a long time. This would indicate many joints and the use of narrow planks.

Departure from Lee's Ferry took place on September 1, 1903. Woolley handled the boat from a semi-standing position in which he leaned against a plank that served as a seat. This plank abutted the bow compartment and was level with the gunnels. At first King and Arthur tried to row from a second pair of oarlocks located aft of center, but neither was able to synchronize with Woolley so the effort to use two oarsmen was abandoned. Thus, the normal position of the trio saw Woolley at the oars near the forward end of the open cockpit, while King and Arthur sat

beside each other on another plank abutting the forward bulkhead of the stern compartment.

River mileage on the Colorado is measured both upstream and downstream from Lee's Ferry, which is Mile Zero. I will use this system of designation by mile point to give the reader a better understanding of the area covered, and the relation of one place to another. On the trip itself, the men could only guess at the distances they covered.

The Sanger journal includes the events of the first two days under the date of September 1. Arthur notes that the first day was wonderful and he was impressed with "*the towering cliffs and straters and colored rocks.*"

Woolley evidently navigated Paria

LAVA FALLS



Riffle and the minor rapid at 3 Mile Wash with no difficulty.

They possibly camped in the vicinity of 6 Mile Wash as there are several low water sandbars in this area. The short distance traveled on the first day indicates a late start, as modern canyoneers running in oar-powered craft generally reach Badger Rapid in about 45 minutes from Lee's Ferry when the river is flowing between 30,000 and 40,000 cubic feet per second.

September river volumes are among the lowest of the year, and travel is very slow on low water. I have averaged eight miles per hour on volumes exceeding 80,000 cubic feet per second. However, in very low volumes there is little current between rapids, and a boatman must read the water to avoid the dead areas. He must row

to average three miles per hour. Examination of the discharge of the Colorado as measured at Yuma in September, 1903, shows an easy fluctuation between 5501 and 8331 cubic feet per second for that month. This is low water and slow travel can be expected. As a whole, 1903 was nearly an average year for runoff.

Arthur's log relates that they "*suddenly came to a number of terrible rapids and falls.*" Woolley piled the boat into the turbulent water and while they came out right side up, they were wet and considerably shaken. Running what was probably Badger Rapid, Mile 7.9, taught them to respect the Colorado. This respect was evident at Soap Creek, Mile 11.2, as they landed and lined the boat down the right side.

Woolley had supplied the party with three coils of three-quarter inch manila rope, each from 80 to 100 feet long. On a lining operation, one of these ropes was attached to the bow and one to the stern. The boat was unloaded and lined empty. Woolley and King each handled a line while Arthur waded among the rocks to clear the boat from the sharp edges as best he could. This system, while not the best technique, proved adequate for the small crew.

IT IS NOT IN Arthur's journal, but he volunteered the information to me that on the second or third day they passed a great rock in the middle of the River. They ran on the right side and had no trouble. This would be Boulder Narrows at Mile 18.5. He also said that they lined only one rapid (Soap) above this large rock, so we can assume that Woolley ran Sheerwall and Houserock rapids. At low water the latter is the more formidable of the two, but neither approaches Soap Creek Rapid for intensity.

It is not definite whether they ran or lined North Canyon Rapid at Mile 20.6, but this is a mean one in low water. Perhaps the confidence generated from running Sheerwall and Houserock sustained them for many miles, and they ran the rapids as they came to them.

Arthur related that some distance below the large midstream rock they saw some clear springs gushing from holes high on the right wall — the spring outlets at Vasey's Paradise, Mile 31.9. Downriver from these springs, he recalled a large cave on the left—Redwall Cavern, Mile 33.

Arthur's journal for this section records that he was impressed with the height, sheerness and color of the

walls which he called "marble cliffs". This is an excellent interpretation of the Redwall section of Marble Canyon.

The Redwall limestone rises at about Mile 24.5 and forms the banks of the river until the Muav formation rises at Mile 35. From this point to the Little Colorado, the Redwall forms a great sheer cliff and creates a spectacular red gorge that would be considered outstanding in any part of the world. There is small wonder that river travelers are awed by the sight.

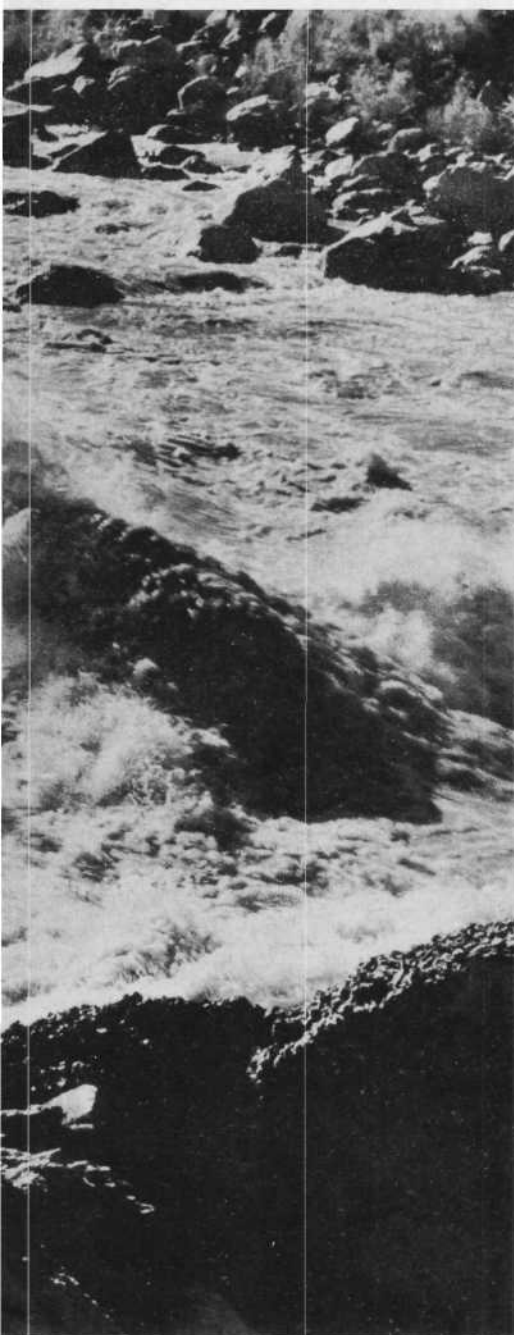
Beneath the appreciation of the scenic grandeur runs Arthur's evaluation of the intensity of the rapids, and awareness of his dependence for life upon the courage and skill of Woolley. He is attracted by the beauty of the environment and repelled by its primal fury. "*. . . It is lucky we have Woolley as a pilot. He is our only hope of getting out of this wonderful, terrifying place.*"

Arthur's total entry for September 4 reads: "*Thank God we are still alive, it is impossible to describe what we went through today. Only the wonderful river knowledge and oarsmanship of Hum Woolley saved us from the Vortex we went through, but we camped on a sandy bar with the river as meek as a lamb murmuring beside us. We are all wet and cold. It is impossible to describe the terrifying grandness of this canyon. Only God could do this. Will pray for tomorrow.*"

On September 5 the journal states that in the late afternoon they came to a large river coming in from the left. This could only be the Little Colorado. They camped in a "nice spot" a few miles below. This camp could easily have been one of the sandy beaches in the vicinity of Mile 65.4.

Arthur told how they could smell the disagreeable odor of the water from the upstream tributary all that evening in their camp. In the morning the odor was gone. This incident tells us that a rain in the basin of the Little Colorado had sent a flood down this tributary. Sulphurlike odors accompanying sporadic discharges down the Little Colorado have been recorded on other occasions. Dock Marston furnished the information that in 1897 when Gallo-way and Richmond reached the Little Colorado, they found a stinking flood disgorging. This so depressed Gallo-way that he pulled his boat upstream to escape the smell.

The combination of low water in the Colorado and a flood coming



WOOLLEY

(continued)

down the Little Colorado accounts for the "whirlpool" Arthur noted at the confluence. The Little Colorado moves detritus to its mouth faster than the larger river can disperse the load downstream. This results in a large spit that remains above water in all but the highest stages. At 30,000 second feet, this island occupies an area three-fourths the width of the river. At lower volumes, it is even wider. At volumes under 8000 second feet, the spit is connected to the left shore, and a normal tributary volume flows around the upstream edge and down the west side. When the main stream is very low and a flood is disgorging from the Little Colorado, the channel east of the spit has a lively flow and creates an eddy as part of the flood attempts to escape by passing to the right. This sets up a current conflict, and results in an eddy.

Arthur says he made every effort to make a daily entry in his journal, but that on some days he was too wet and tired and could barely crawl into his bed. Such a day must have come along on September 6 because the entry for that day is combined with that for September 7.

The experienced canyoneer recognizes the distance between the camp on the evening of September 5 and the setting described at the start of the entry for September 6 and 7. The omitted description must represent the mileage between Lava Canyon, Mile 65.5, and Seventy Five Mile Rapid. These miles are much more formidable at high water than they are at low water, and I see nothing that should have given them undue trouble. Unkar Rapid is toughest in the 30,000 to 40,000 second feet range but falls off considerably in the lower volumes. At low water there are many rocks showing and the same is true of other rapids in the vicinity, notably Tanner Rapid. It is possible that the rock barriers resulted in a number of linings. The journal doesn't say and Arthur can't remember. The fact remains that the scribe was tired.

If Arthur Sanger knows granite when he sees it, we are forced to apply his description in the entry for September 6 and 7 to Hance Rapid, Mile 76.7. He pinpointed this location verbally by saying that the place was about 20 miles below the river that discharged the ill-smelling flood. The exact distance from the Little Colorado to Hance Rapid is 15.3 miles.

The upper Granite Gorge rises at the foot of Hance and in places the inner gorge is quite narrow. Hance Rapid is a rather violent stretch of water at any volume. The 1923 Geological Survey party measured this rapid as falling 27.5 feet in its length of approximately 1000 feet. Arthur's description follows:

"This morning we came to a place in the river where the great granite walls came almost together. We could look down and see the most fearful and terrifying falls with no way to stop. Woolley was standing and backing the boat into this. John and myself were laying in the bottom of the boat. I thought this was the end as we were rushed up a great wave, then another until I was almost sick and dizzy with fear. Woolley would yank the boat this way and that until one of the great waves or whirlpools suddenly swung us broadside to a great wave coming up the river and towering at least 20 feet high, the top curling right over us. It came down and almost filled the boat again. The next one did fill it. Woolley . . . paddled the boat over to the shore—he lost one oar."

Arthur gave verbal augmentation to his journal by saying that this was the scene of the first of two capsize on the trip. The entry infers that the cork life jackets nearly floated them out of the boat. He completed this entry in the journal by describing the bedding, clothes and camera spread out to dry, as John King made hot coffee in the dutch oven.

KING DID the cooking, and meals were prepared in the all-purpose dutch oven. At one time or another this utensil was used for coffee, soup, stew, fried chops, fish and flapjacks. It is interesting to note that they carried no canteens. They did have cups, plates and a bucket. They drank from cups dipped in the river, and used silt to scour their plates.

The difficulty at Hance renewed their caution, as Arthur's log reports

they roped and fought rapids and rocks all day on September 8. However, he still has time to "... admire the marvelous stratters of colored rocks piled a mile high in all directions." Formidable rapids such as Sockdologer, Grapevine, 83 Mile and Clear Creek were passed without comment as their names and locations were not known to Arthur.

Likewise, the events of September 9, 10, 11 and 12 are compressed into one brief paragraph that includes the following: "Have been fighting many rapids and rocks but—beside sprained anghols, hands, backs and cuts are all O.K."

It is difficult to ascertain how far they traveled during these five days. They passed Bright Angel Creek without noticing the clear stream. There were no tourist installations and the Mormon-owned Grand Canyon Transportation Company was just getting the trail below the rim. The cable car that was the forerunner of the suspension bridge across the Colorado, was not built for several years.

The violent low water rapids at Horn, Monument and Hermit creeks were surmounted. Boucher, Crystal and Serpentine went down in turn. W.W. Bass did not install the Bass Cable until 1908. Neither had the Hakatai Cable been installed, so the hard working trio saw the Canyon nearly as unmarked by man as had Major Powell in 1869. Arthur made no record of having seen Crystal or Shinumo creeks. He mentions camping near a side-stream that came in on the left. This would almost have to be Hermit Creek.

The entry for September 14 reads: "We went through another terrible, rocky rapid this morning. We are all wet, as usual. Hit a bad rock and sprung a seam in the boat but we stuffed some corking into it. Am O.K." This rapid could be Dubendorff, Mile 131.6, as the description fits at low water.

No mention is made of clear, cold Tapeats Creek, at mile 133.7, so it

ABOUT THE AUTHOR:

Near the end of the war, P. T. Reilly's mother gave him a subscription to Desert for his birthday. In the first magazine delivered was an advertisement by Norm Nevills, the famed riverrunner. Reilly wrote to Nevills and arranged for a trip down the San Juan, which took place in May, 1947. That was the start of an avocation that has seen Reilly rise from river passenger to a leader in that exclusive circle of Western adventurers who qualify as expert whitewater boatmen.

Reilly, who makes his living supervising the making of tools used to fabricate airplanes, missiles, satellites and aerospace ground equipment for Lockheed, is not engaged in the commercial aspects of riverrunning. Thus, he shuns publicity—"the river people know me by my actions," he writes, "and the others don't care about authors."

must be assumed that their attention was directed to the medium sized rapid at that point.

Arthur did not notice Deer Creek Falls at Mile 136.3. There is no way of knowing if Woolley and King saw this spectacular sight. King inadvertently might have obstructed the boy's view, or they might have been preoccupied with the river.

Somewhere in the middle of the Canyon they lost Woolley's gold pan to the river. Since the start of the trip, Woolley had worked the beaches in the evenings, but had found no colors. At first Arthur had watched the light placering, but his interest waned as gold failed to appear. John King displayed energy and agility by climbing among the rocks and cliffs at each camp. While Woolley panned for gold, King searched for veins of mineral.

Although it was not mentioned in the log, Arthur states that somewhere near the middle of the Canyon they experienced a sudden rise in the river. They were forced to move their beds to higher ground and to retie the boat. Next morning the river had dropped. Brief rises of this nature are common in Grand Canyon and are due to spot storms which concentrate rain in comparatively small areas. With little undergrowth to impede its descent, the rain pours down the bare rock and forms multitudinous channels into the larger tributaries. These floods are violent but short-lived, frequently lasting less than an hour or so. The discharge is enough to raise the level of the river several feet. Such floods tend to abrade the bed of the river at the mouths of the side canyons, and the suddenly increased pitch creates a rapid. The attendant boulders washed into the river give character to the rapid.

The entries for September 15, 16 and 17 are lumped together, and it can be assumed that the first two of these days were rough ones. The men should have passed 138 Mile and Upset rapids—both of which are mean at low water.

Arthur did not see the mouth of Havasu Creek. This is not surprising as modern river parties have been known to miss this feature. The mouth is very narrow and there is a minor rapid below.

Arthur augmented his journal with the verbal statement that they "lined a bad rapid at the volcanic rocks." This is certainly an understated description of Lava Falls at

Mile 179.4, one of the world's great rapids.

The few lines in his entry for the three days must pertain to September 17. He writes: "*We are in a different formation and the river is much easier to travel. We saw some Indians on the left bank. When they saw us, they ran and hid. We came to a creek at noon and John took the 45-70 and shot a young doe deer. Boy it certainly tastes good. Fried chops in*



A MODERN BOATMAN ENTERS THE VIOLENT LOW WATER RAPIDS AT HORN CREEK

the dutch oven fried in bacon. We also saw some beavers."

Possibly the deer was shot at Spring Canyon, Mile 204.4. There is perennial water in this tributary, and burros have found means of reaching the river in this area. Probably deer made the first trails. Beaver are found throughout the Canyon, but they are especially numerous in the last hundred miles. I have seen beaver on several occasions in the immediate area of Spring Canyon.

On September 18 the journal carried a short entry, but a real puzzler. "*We camped near a small brook and John and myself caught seven trout. We also saw some mountain sheep on a steep cliff."*

This stream should be Diamond Creek, at Mile 225.6, but I have never heard of trout being found here. Arthur is positive the fish were trout as he had caught many of them in Colorado before he moved to California. He remembers these seven fish as being eight to 12 inches in

length. They could have been catfish or split-tail that had entered the creek from the river.

In any event, we have a minor mystery that is not likely to be solved. It is not probable that Diamond Creek was ever a trout stream, so we must assume that Arthur was mistaken as to the identity of the fish.

In the entry for September 19, Arthur gives such good description that it is possible to pinpoint his loca-

tion with a high degree of certainty. The entry follows.

"September 19. We entered the terrible rapids and granite mountains. Later we came to a place where two streams came in. There was a steep cliff on the right and a higher one on the left. As we came to this, the awful current swept us to the one on the left then we just missed this. We were swept in a mass of spray into another falls directly into the cliff at the right. Again we rowed and pushed and were hurled into another rapid and fall around a point, just missing a rock at the edge. We were in great waves and tossed about like a cork. We slid over a rock at the bottom and came out right side up but half full of water. Am drying the 45. rifle."

These few words tell the experienced riverman that Woolley had piled the boat into the fast water below Diamond Creek and had successfully taken on 231 Mile, 232 Mile,

—Text continued page 31

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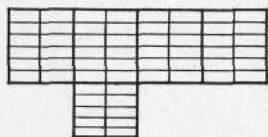


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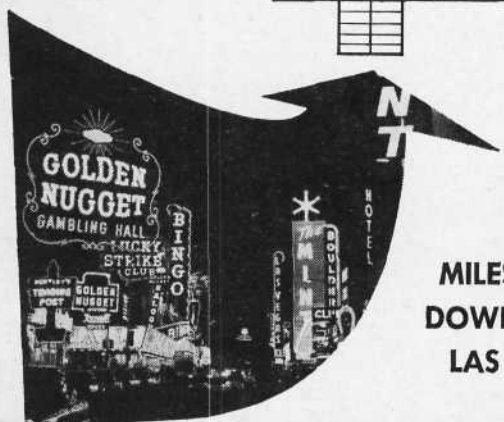
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WOOLLEY

(continued from page 29)

234 Mile, Bridge Canyon at Mile 235.0, and Separation Rapids. The last named is at Mile 239.5 and was the most violent of this group. It has since been silted-in by the backed-up waters of Lake Mead, and no longer exists in its former character.

Woolley probably landed on the first low water beach that he was able to reach with a boat half full of water. After the craft was bailed dry, they discovered water in at least one

of the compartments. Besides drying the rifle, as noted in the log, Arthur says they found their bedrolls were wet. Thus they probably camped where they bailed the boat and dried their belongings.

Arthur told me that they experienced the second of their two capsize in the last 50 miles of the Canyon. Woolley had allowed the boat to get crosswise in a minor rapid, and over they went. No mention of this incident appears in the journal, so we can assume the men took the misfortune in stride.

Lava Cliff Rapid has been silted in for many years, but before Hoover

Dam was built it was probably the most violent stretch of bad water on the river. It was located at the mouth of Spencer Canyon, Mile 246. Julius Stone quotes Galloway as saying that this was the worst rapid in all the canyons, and later states that Galloway shaved and carefully washed himself before having anything to do with it. Most of the earlier parties lined Lava Cliff on the right, and Arthur says that Woolley followed this procedure. The journal disposes of September 20 by stating. *"We passed another bad rapid today and several not so bad."*

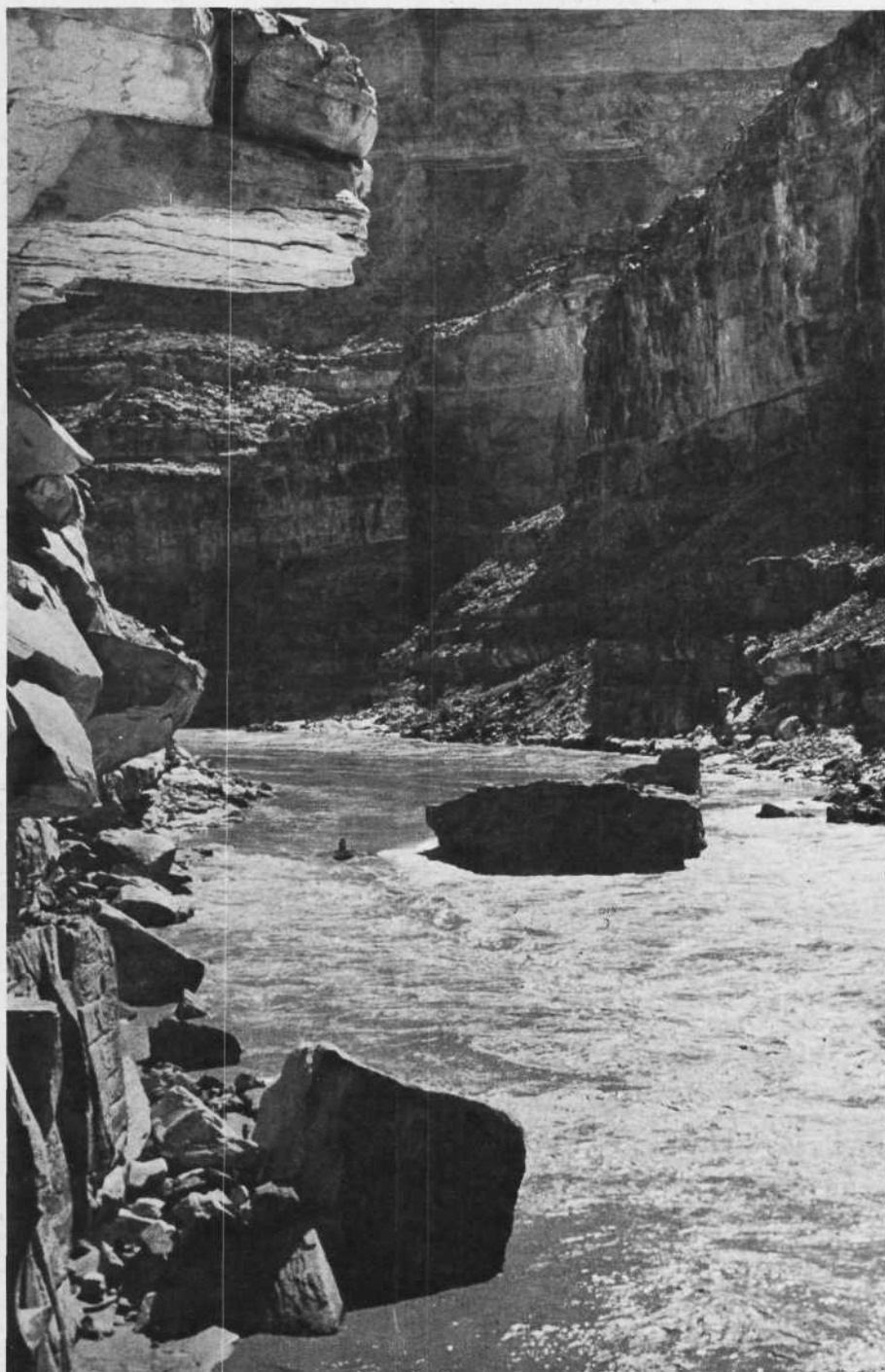
The next entry of the journal presents another mystery. It reads as follows:

"Sept. 21. We came out of the canyons later this afternoon. What a feeling of relief to look around and see the Horizon and the sun. We are camped with some prospectors on the river bank. They think Charlie Bolster is working about ten miles north of here at edge of mountains."

THE TRAVELERS emerged from the west end of Grand Canyon. They had traversed 280 miles of the Colorado River and the boat had been full of water on about a dozen occasions. John King departed on foot from this camp to find Charlie Bolster. It is not known that he had ever been in this locality previously, but the interval must have amounted to several weeks. King did not have a canteen in an area when the temperatures are usually over 100 degrees. Anyway, he set off and traveled northerly along the foot of the Grand Wash Cliffs.

While King was gone, Woolley and Arthur unloaded the boat and dried the wet contents. The hatch covers had been designed to seal the openings by mating on four beveled edges. When the covers had been wet repeatedly, the wood had swelled. The last capsize had not helped this condition, and one compartment had considerable water. The other compartment was in better shape. Unfortunately, the 4x5 camera and the 10 glass plates, which had been exposed at various points on the voyage, were in the wet compartment. The emulsion on the plates had caused them to stick together and they were ruined. Arthur threw them away. The two remaining unexposed plates were in the dry compartment and still in good shape.

The camera was dried and cleaned and appeared to be in working order. They made minor repairs to the boat, and noted that the supply of food



BOULDER NARROWS

WOOLLEY

(continued)

was low. Some of the food had been in the wet compartment and was spoiled beyond use.

On September 26, John King returned with Charlie Bolster and the four resumed the boat trip. Arthur noted that they were "crowded but expect no more bad rapids."

The following day, September 27, the journal records that they landed upstream when they saw the steamers Mohave and Searchlight tied up at the left bank. This was about a half-

day's travel below the mouth of the Virgin River. He exposed one of his two remaining plates for a photo of the boats. The quartet went aboard the steamers and talked with about 15 men, mostly prospectors. They were given something to eat and Arthur remembers that the steamers were having interference from the trees and brush which had repeatedly knocked down the stacks.

Dock Marston has pointed out that the Mohave could not have been one of the boats in the photo since both ships shown are basic single stackers. The Mohave was much larger and was the only two stacker on the river. One boat might have been the St. Valier. Young Sanger probably heard

the Mohave mentioned in the conversation and concluded she was one of the boats at the river bank.

The entry for September 28 contains only the following eight words: "Went past deep canyon but water was calm." The "deep canyon" could mean the passage through either Boulder or Black Canyon.

The notations for September 29 and 30 only record that they are floating along on a smooth river, inferring that it is refreshingly different from the rapids.

They began to see ducks and geese, and tried to augment their supplies by shooting at the fowl with the 45-70. Arthur related that on one occasion they had remained motionless

Desert — magazine of the Outdoor Southwest

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RARE
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BACK ISSUES

YOUR TIMELESS GUIDE TO ADVENTURE IN THE GREAT SOUTHWEST OUTDOORS:

gem-mineral collecting areas ghost towns lost mine locales

Southwest travel-exploration nature lore (and just plain good reading!)

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BACK ISSUE DATE	ILLUSTRATED FEATURE ARTICLES				
	Mapped Gem-Mineral Field Trip	Mapped Ghost Town	Mapped Lost Mine Treasure	Mapped Travel Exploration	Desert Southwest Nature
Mar 55	WEIGHT: "Gems of the Monte Cristo Mts." (Nev.)			MURBARGER: "Campers' Tour of Mexico"	JAEGER: "Four Days in Darwin" (Cal.)
May 55	WEIGHT: "Bell Rocks of Big Sandy Valley" (Ariz.)				JAEGER: "Desert Tortoise" (Southwest)
Jun 55			WEIGHT: "Hidden Gold of Mission Bicuener" (Cal.)		JAEGER: "Strange Plants of Desert Lands"
Jul 55			WEIGHT: "Dark Gold on the Tabaseca Trail" (Cal.)	MURBARGER: "Pioneer Trails in the Trinities" (Nev.)	JAEGER: "Pack Rats"
Aug 55	MURBARGER: "Opal Miner of Rainbow Ridge" (Nev.)			HENDERSON: "Three Days in Devil's Canyon" (Baja Calif.)	JAEGER: "Strange Hatcheries for Desert Insects"
Sep 55	WEIGHT: "Trilobites in Marble Mts." (Calif.)		RUSSELL: "We Lost a Ledge of Gold" (Death Valley)		JAEGER: "Land Snails"
Feb 56	WEIGHT: "Red Rock Canyon Gem Trails" (Cal.)		LEADABRAND: "Treasure Canyon in the Argus Mts." (Cal.)	MURBARGER: "Living Silver in the White Mts." (Nev.)	JAEGER: "Desert Termites"
Apr 56		BRINKMAN: Jerome, Ariz. (no map)	ASHLEY: "The Gold I Lost in Morgan City Wash." (no map)	MURBARGER: "In the Land of the Pronghorn" (Nev.)	JAEGER: "The Rarest Pinyon"
May 56	WEIGHT: "Agate in the Chuckawalla Mts." (Cal.)	MURBARGER: Lida, Nev.			JAEGER: "Palm Beetle"
Jun 56		MURBARGER: "Charcoal — the West's Forgotten Industry" (Frisco, Utah; Ward, Nev.—no map)		HENDERSON: "Petrified Forests in the Circle Cliffs" (Utah)	JAEGER: "Poisonous Desert Plants"
Jul 56	WEIGHT: "Petrified Palm in Chocolate Mts." (Cal.)			HENDERSON: "Boat Trip in Lodore Canyon" (Utah)	JAEGER: "Last Stand of the Pronghorn"
Aug 56	WEIGHT: "Opalite in the Ship Mts." (Cal.)			WING: "Exploring the Little Colorado" (Ariz.)	JAEGER: "Desert Owls"
Sep 56	WEIGHT: "Agate in Silver Peak Mts." (Nev.)			KENYON: Sandstone Canyon in Anza Desert State Park" (Cal.)	JAEGER: "Agave and Ocotillo"
Oct 56	WEIGHT: "Treasure Trails in Superstition Mt." (Cal.)		PAGE: "Mine With the Iron Door" (Ariz. no map)		JAEGER: "Canyon Bat, Mice and Shrew"
Nov 56	WEIGHT: "Gemstones of Palo Verde Pass" (Cal.)			CARROLL: "Jeep Trails in the Needles" (Utah)	JAEGER: "Elephant Trees in Baja Calif."
Dec 56	TAYLOR: "Chalcedony in the Gila Mts." (Ariz.)			TINKER: "Stone Walls in Baboquivari Valley" (Ariz.)	JAEGER: "Cardon Cacti" (Baja Calif.)
Jan 57		LEADABRAND: Leadfield, Nev.	WEIGHT: "Lost Apache Gold" (Ariz.)	HENDERSON: "Old Trail to Chuckawalla Spring" (Cal.)	JAEGER: "Where Birds Come for Water"
May 57			WEIGHT: "Lost Silver in the Trigos" (Ariz.)		JAEGER: Plants that Thrive in Saline Soil"

while the current guided the boat silently toward a number of geese resting on a low mid-river bar. The ensuing shot missed the birds but had a profound effect on an Indian who was working on the roof of his small dwelling. The Indian rolled to the ground and scampered into the brush, probably cursing whitemen who thought redmen made good targets.

The men cut brush and camouflaged the boat in an effort to get closer shots at the geese, but their targets proved too elusive.

The journal has no entry for the first three days of October, but on the fourth, Arthur records that they "... passed Fort Mohave and came to the

little town of Needles. Went ashore. Obtained eggs, meat, spuds." They had now traveled 456 miles from Lee's Ferry.

On October 5 the men worked on the boat, installing a new bottom, and Arthur gave the Indians some merriment when he put Indian clay on his hair. His laconic comment at the venture took only three words: "Was fooled. Lice."

The Indians of the region had practiced the custom of immobilizing their infectious pests by saturating the hair in a mud pack. This was allowed to harden and later the dead lice were washed away with the mud. The Indians were amused by the



CHARLIE BOLSTER IN 1895

BACK ISSUE DATE	Mapped Gem-Mineral Field Trip	Mapped Ghost Town	Mapped Lost Mine Treasure	Mapped Travel Exploration	Desert Southwest Nature
Jun 57	TILSHER: "Garnets in the Inkoph Gorge" (Calif.)			APPLEBY: "Baja California Vacation"	JAEGER: "The Upside Down Mojave River" (Cal.)
Jul 57	SPERRY: "Gizzard Stones in Yellow Cat Area" (Utah)			MURBARGER: "Camper's Tour of New Mex."	JAEGER: "Skunks"
Aug 57				MUENCH: "Cliff Dwellings on Black Mesa" (Ariz.)	JAEGER: "Parasites of the Desert"
Sep 57	CONROTTO: "Banded Rhy- olite and Petrified Wood" (Baja Calif.)			MURBARGER: "Dripping Springs in Organ Pipe Nat. Mon." (Ariz.)	JAEGER: "Shrike"
May 58	CONROTTO: "Apache Tears in the Chuckawalla Mts." (Cal.)	MURBARGER: Taylor, Nev.			JAEGER: "Owls and Moths"
Jun 58	CONROTTO: "Chalcedony in Whipple Mts." (Cal.)	MURBARGER: "The Seven Troughs Bonanza" (Nev.)			JAEGER: "Dry Lake Filled with Water" (Baja Calif.)
Jul 58				WARD: "Back Road on the Mojave" (Cal.)	JAEGER: "River of Bitter Water" (Amargosa— Cal.—Nev.)
Aug 58	CONROTTO: "Marble from Verde Antique Quarry" (Cal.)		HEALD: "Lost Bells of Tumacacori" (Ariz. no map)		JAEGER: "Edible Plants of the Desert"
Dec 58		MURBARGER: Jarbridge, Nev.	WEIGHT: "Old Dutchman's Lost Mine" (Cal.)	HENDERSON: "Canyon Boat Ride" (Utah)	JAEGER: "Birds Lost in the Desert"
Jan 59				WERNER: "Salt Spring" (Baja Calif.)	BECKWITH: "Use of Native Desert Plants"
Feb 59		MURBARGER: Rhyolite, Nev.		ANDERSON: "Lure of the Salton" (Cal.)	JAEGER: "Burro"
Mar 59	CONROTTO: "Gem Banks at Lake Mead" (Nev.)			MURBARGER: "Exploring Fable Valley" (Utah)	JAEGER: "Names of Desert Places and Things"
Apr 59	SHAUB: "Touring Mexico for Minerals"	ABARR: "Fort Ojo Caliente" (New Mex.)	WEIGHT: "Lost Silver in the Trigos" (Ariz.)		JAEGER: "Palm Trees"
May 59	WEIGHT: "Carnelian and Roses at Ash Hill" (Cal.)	MURBARGER: Cortez, Nev.	WORTLEY: "Alec Ramy's Lost Bonanza (Death Val.)		JAEGER: "Mesquite"
Jun 59		STOVALL: Randsburg-Jo- hannesburg, Cal. (no map)		ABARR: "Seven Cities that Died of Fear" (New Mex.)	JAEGER: "Sage Grouse"
Jul 59	RANSOM: "Red Jasper on the Mogollon Rim" (Ariz.)			WERNER: "Wheeler Peak" (Nev.)	JAEGER: "Desert Vines"
Aug 59	NAPIER: "Five Trips in Hoover Dam Area" (Nev.)	DOYLE: Randsburg, Cal. (no map)		MURBARGER: "Recreation on the Lower Colorado River" (Ariz.)	JAEGER: "To Baja Cali- fornia with a Naturalist"
Sep 59					JAEGER: "Desert Ground Squirrel"
Oct 59				HEALD: "Winter at Grand Canyon" (no map)	JAEGER: "Sand"
Nov 59	RANSOM: "Tourmaline, Crystals, Quartz in Bradshaw Mts." (Ariz.)	DOYLE: Needles, Cal. (no map)		HILTON: "Bahia de los Angeles" (Baja Calif.)	JAEGER: "Creosote Bush"
Dec 59				HILTON: "Whispering Canyon" (Baja Calif. no map)	JAEGER: "Kangaroo Rat, Small Birds"
May 60			WEIGHT: "The Lost Wilson Bonanza" (Cal.)	OERTLE: "Boating on the Desert" (no map)	PETERSON: "Desert Quail"
Jun 60				JENSEN: "A Visit to Lee's Ferry" (Ariz.)	JAEGER: "Agave"

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WOOLLEY

(continued)

knowledge that lice did not differentiate between white and red scalps.

October 6 saw the boat headed downstream once again. Arthur records that they had a bad time below the railroad bridge, but does not elaborate. This could be the place now known as the Devil's Elbow. Curiously, he does not wonder why they did not float down to Ehrenberg from Needles in the first place, and still accepted the statement that the only way to reach Ehrenberg was to enter the river at Lee's Ferry!

The following day, October 7, Arthur records passing an Indian

camp and a bad whirlpool. He probably applied the name whirlpool to what would commonly be called an eddy. This could have placed the party near the mouth of the Bill Williams River.

Arthur relates that the following incident occurred at one of their camps below Needles. The boat had been tied below a sharp silt bank. Woolley approached to wash the plates in the river. The bank collapsed and he fell into the water. The utensils were lost, and it was some seconds before the boatman emerged. He had come up under the boat and had to work his way to the far side. These collapsing silt banks are common during a rising river, however slight, and the only sound is a light swish.

forced to recalc the boat, and this evidently took several days. During this time Arthur bought an old single-barrel shotgun and two boxes of shells at the store.

The journal states that Arthur got ten quail in two shots, and the crew dined on the fried birds. He also records seeing thousands of geese. Sometimes the points and islands were black with the waterfowl. Once the gun was fired into a heavy mass of geese without loosening a feather.

The journal is not definite on the date the men left Ehrenberg, but it does record floating on a smooth river on October 29 and 30. On the 31st they passed Yuma and went some miles beyond. They began to doubt the wisdom of this action when the low river began to peter out in multitudinous small channels.

They finally decided to row back upstream, and had made about two miles when they came to an Indian hut on the bank. Here they landed and traded the boat to the Indian for a pack job into Yuma. Arthur says the going was slow and rough. It was almost as easy to walk at it was to ride the Indian burros. The journey took two days so it is probable that Arthur's estimate of having drifted 10 miles past Yuma was a little short.

The log does not state (and Arthur cannot remember) how long they remained in Yuma, but all four men returned to Los Angeles on the train. Arthur concludes his journal with these words: "*John, Hum and Charley are going to Nevada.*"

Many days of research have revealed additional information regarding this trip, but a published account has yet to be found.

Otis Marston ascertained that the Maraquitta Lode was patented on August 9, 1883, by Jacques Traves. Traves had died, leaving the mine to his widow. Since the mine was patented, it would not require assessment work.

Dock also unearthed a proof of labor recorded at Yuma that qualified the claims adjoining the Maraquitta for 1903. These were known as the Buck and San Bernardino. The work was subscribed to by A. R. Sanger and E. B. Woolley on December 19, 1903. J. W. Brown and W. G. Keiser (the latter still lives at Quartzsite) were the witnesses. It is on record that Mrs. Jacques Traves was the owner of the mine and the claims at that time. Thus the woman known to Arthur Sanger as Madam Shell was

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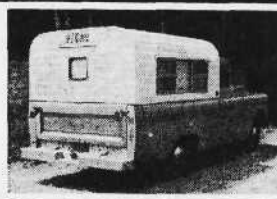
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THE ENTRY under October 8, 9 and 10 heads the statement that they landed at Ehrenberg and are making arrangements to go inland to the Maraquitta Mine. We can assume that they covered 106 miles of slow river between Needles and Ehrenberg in something under five days, which is good time under the conditions. Arthur thought that Ehrenberg was a nice little town and was impressed by the big store. They finally hired a Mohave Indian to drive them to the Maraquitta in a wagon. They got to the mine October 11, and started on the assessment work.

Arthur thinks they worked three claims and records the job being accomplished between October 12 and 21, saying it was very hard work.

The men returned to Ehrenberg on October 22, and while the journal records that the "*boat is OK*", Arthur states that the river had fallen in their absence and the boat was found high and dry on a mud flat, with the planks badly warped. They were



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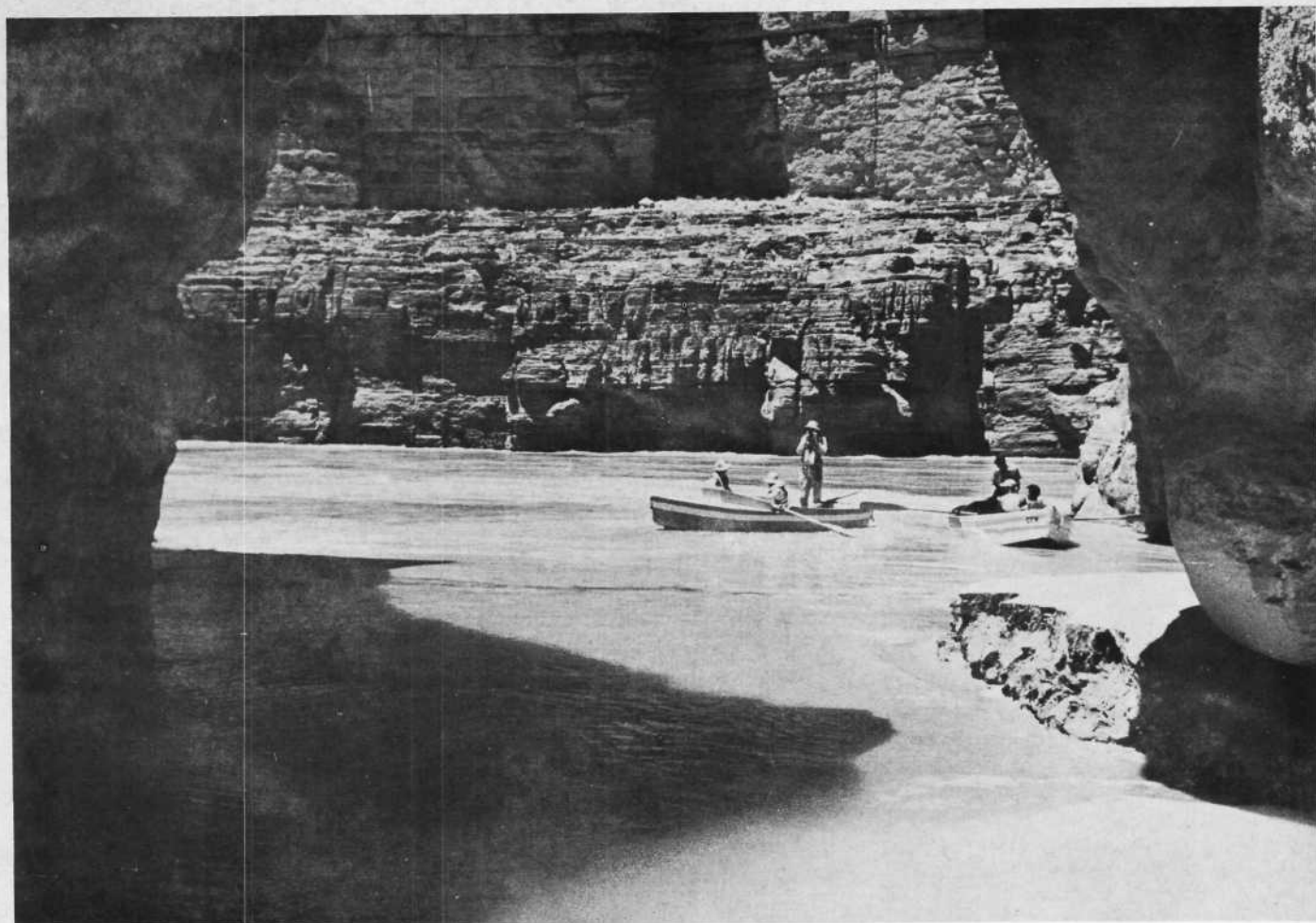
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FROM THE MOUTH OF HAVASU

in reality the widow, Mrs. Jacques Traves.

When asked about the discrepancy between the time the men were in Yuma and the date the assessment work was recorded, Arthur stated that Madam Shell was very upset about the negligence and had them return to Yuma and attend to the legal end of the matter.

Bill Keiser remembered Woolley, and in succeeding years he performed the assessment work for Mrs. Traves on the two claims adjoining the mine.

Arthur Sanger thought that Woolley had died in Tonopah about 1908,

but I found him listed in the Los Angeles City Directory in 1913. Comparatively little is known about Elias B. Woolley. My wife found his name spelled Woolley more often than

Wooley, and one deed had the name spelled both ways. So far, no surviving members of his family have been found, although it is known that he



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WOOLLEY

(continued)

was a married man and had a daughter, Lena, who became Mrs. Claude E. Hill.

Woolley also had a son named Bert Houston Woolley, who had a son, Edwin Benjamin Woolley, born January 21, 1917. The grandson of Elias was traced to San Gabriel, California, as lately as 1959, but here the trail was lost.

John A. King participated in the rushes to Tonopah and Goldfield, and it is thought he spent several years in Mexico. Otis Marston obtained the record that King died July 14, 1916, at Waterford, Connecticut.

Charlie Bolster called on Sanger in Goldfield about 1906, then disappeared as the boom declined. Arthur has not seen him since.

Sanger returned to Los Angeles and spent a few months with his family. In September, 1904, he joined John King in Tonopah. He stayed there one year, then the pair moved to

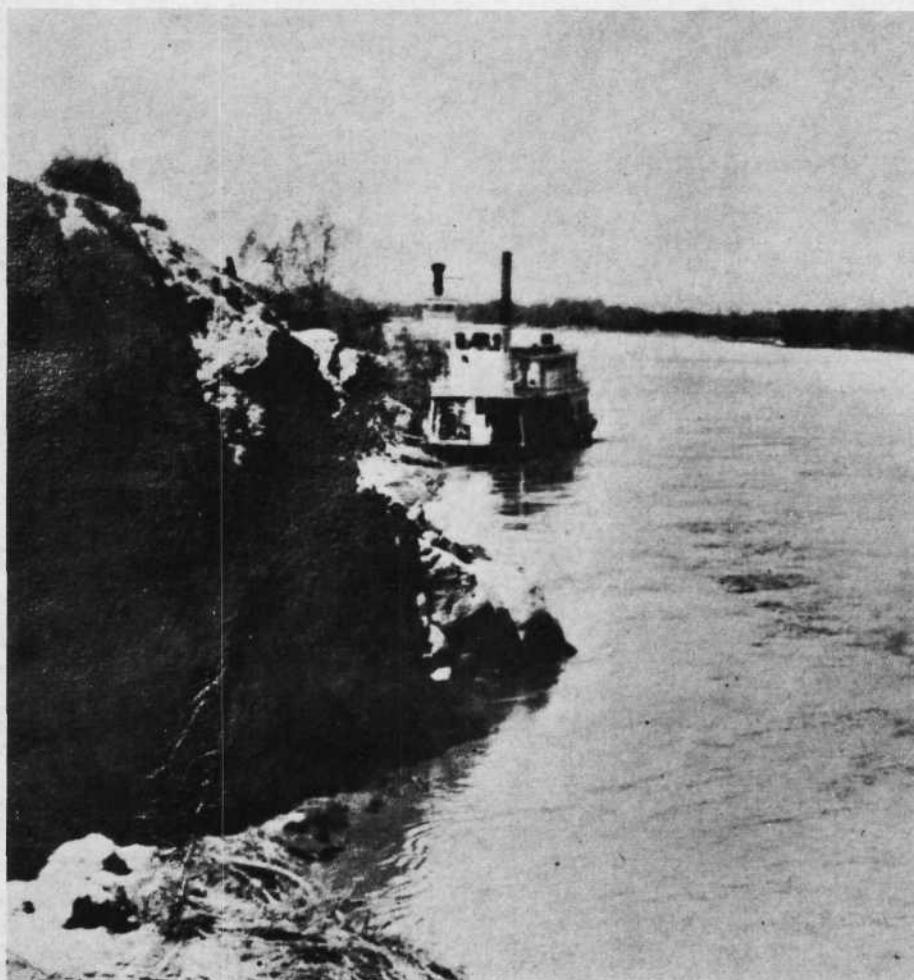
Goldfield, opened a produce store and dabbled in mining stocks. Arthur purchased a seat on the Goldfield Stock Exchange, and joined the Montezuma Club. Later he bought seats on the Los Angeles and San Francisco exchanges.

In 1909 Arthur bought the seventy foot yacht, *Aloha*, and renamed her *Dreamer*. He owned this boat until 1946. He cruised among the islands off the California coast and investigated aboriginal sites. He joined the Los Angeles Yacht Club which later merged with the California Yacht Club. In 1920 he started the Catalina Island Yacht Club, and is now the Honorary Staff Commodore. He frequently told the story of his Colorado River adventure during these days, but until 1951 none of his listeners realized its significance. Arthur never married and lives with his sister in Los Angeles. In the summer of 1961 this 81-year-old youngster pulled a house trailer to the Sierras, Yellowstone, Klamath River and back to Los Angeles.

Some mystery centers around Woolley. Where did he learn the peculiar technique of running the rapids of the Colorado River? Did he participate in the gold rush to Glen Can-

yon during the 1890s and there meet Nathan Galloway? Did he talk to the trapper at Needles when Galloway and Richmond completed their run in 1897? Was there an underlying motive for the trip other than simply prospecting in Grand Canyon, combined with the need to do the assessment work near Quartzsite? How could they descend an unknown river, stop at a certain place and have one of the men strike out into the desert without a canteen to return in five days with the sought-for companion?

It is possible that no one will ever know the answers to these questions, and it is ironic that the man who knew the least about the trip should be the one to preserve its record. ///



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ROCKHOUND HEADQUARTERS: Calico Motel, Highway 91-446 & Calico Road. Phone Clinton 6-3467. P.O. Box 6105, Yermo, California. Brochure on request.

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BOOKS, COINS, stamps wanted. Cash paid. Send quarter for marvelous lists. Books found. No obligation. Williams, Box 673, Hoboken, New Jersey.

\$15 PER 100 Indian head cents, \$9 for 1931-S cent. Complete buying list 25c. Billy Matherly, Box 3311, El Paso 3, Texas.

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COLOR CACTUS slides, 35 mm. Kodachrome. List 10c, sample and list 25c. Roy Vail, Botany Dept., University of Oklahoma, Norman, Oklahoma.

● PLANTS, SEEDS

WILDFLOWER SEEDS: New 1962 expanded Wildflower Catalog is being printed. Same quality, same price, 50c. Clyde Robin, P.O. Box 2091, Castro Valley, California.

● REAL ESTATE

FOR SALE: bare land, 160 view acres located in Martinez Canyon overlooking Coachella Valley and the Salton Sea. Booming area, excellent location for exclusive dude ranch or canyon housing project. Reasonable. Write Cotton, 361 North Fifth Street, Coalinga, California.

FORTY ACRE Coachella Valley ranch for sale, 18 acres seven-year-old Thompson grapes, 20 acres four-year-old grapefruit. Three bedroom ranch house, one duplex two bedrooms each. Asking price \$112,000. Other ranch and commercial investments, also homes, available. Jorgensen Realty Branch Office, P.O. Box 965, Fireside 6-8389, Palm Desert, California.

FOR INFORMATION on desert acreage and parcels for sale in or near Twentynine Palms, please write or visit: Silas S. Stanley, Realtor, 73644 Twentynine Palms Highway, Twentynine Palms, California.

BEAUTIFUL WEST Phoenix residential desert; gas, electricity available, hot well, Highway 80 adjacent. Five to 40 acres at \$500 per acre. Terms: R. O. Baird, 2124 Mill, Tempe, Ariz.

● WESTERN MERCHANDISE

FREE "DO-It-Yourself" Leathercraft catalog. Tandy Leather Company, Box 791-242, Fort Worth, Texas.

GHOST TOWN items: Sun-colored glass, amethyst to royal purple; ghost railroads materials, tickets; limited odd items from camps of the '60s. Write your interest—Box 64-D, Smith, Nevada.

SUN COLORED glass for sale. Mrs. A. E. Wyckoff, 11501 Davenport Road, Agua Dulce, Cal.

● MISCELLANEOUS

LEARN OIL painting. New correspondence courses for amateur and advanced students. Personal forty point critique of each painting. Walker School of Art, Box 486, Montrose, Colo.

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EXQUISITE FURS direct from my mountain trapline; fashioned by expert New York furrier. Beaver, muskrat stoles, \$185. Mink scarves, \$60 up. Beaver rugs, \$29.50. 50% down, balance on delivery. You won't be disappointed with quality. Taking orders now. Dick Sherman, Umatilla 3, Oregon.

PLASTIC EMBEDDING for fun and profit, no oven. Make beautiful jewelry, decorative panels, science specimen castings. Catalog 25c, Natcol Plastics, Box 444, Yucaipa, Calif.

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WANTED: BELL suitable for church tower. Contact: Jeannie Cook, LaVerne College, LaVerne, California. Can make only modest payment.

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Mail to DESERT MAGAZINE, Palm Desert, California

NEW IDEAS for DESERT LIVING

By DAN LEE



POP-TENT

NEW POP-TENT AMAZING:

Fast weekend expeditions into the desert are a lot more comfortable if we can travel light, get set-up quickly. A tent that goes

up easily in any terrain—in the dark if necessary — is a great advantage, and just such a tent has come our way. They call it a Pop-Tent, and after trying the thing over a windy weekend at Salton Sea, I'm enthusiastic. The most amazing feature of the Pop-Tent is the fact that *no* stakes or ropes are required. It weighs only 15 pounds and packs into a small bundle (with a carrying strap) just 24-inches long by 8-inches diameter. It packs anywhere in your car with no trouble.

To erect the tent, pull it out of the carrying bag and unfold into a long, slender bundle. Six Fiberglass bows are then connected by means of metal ferrules, much as you would assemble a fishing pole. Stand the bundle upright and *press down* on the flat metal disc atop the tent. This mechanism locks the Fiberglass bows in the proper position. Now step back and pull outward on the bows and the tent literally "pops" into shape to resemble an igloo, or dome-shaped hut.

There is a zippered door and an inside zippered mosquito net for a screen. A small zippered window panel provides ventilation. Six-sided, the Pop-Tent is about seven feet across at the base. While advertised as a "two-man" tent, it is actually far more roomy than appears possible from the outside. Just for fun, I laid out my family's four sleeping bags—two adults, two kids—and found they fit snugly inside the tent! Larger tent models are available from the maker.

Because no stakes or ropes are necessary, the Pop-Tent can be erected

in soft sand, on a beach, or on hardpan with equal ease. It has a full floor, of course. In short, it is the easiest, fastest tent to erect I ever tried.

What astonished us was the Pop-Tent's ability to withstand high winds without blowing away. Early on the morning of November 5, at Salton Sea, we had wind-gusts of up to 45-miles-an-hour and the Pop-Tent stayed up! It leaned over so far that it was almost flat, but never for a moment did it whip, pop, or look as though it might blow away. Canvas loops are provided at the base, if you want to stake it down as a precaution—but I don't believe it would ever collapse so long as someone remained inside.

Price is \$79.50 from Dept. D, American Thermos Products Co., Norwich, Conn. Or contact any Thermos dealer, such as the following: Phoenix Hardware, 2202-D N. 22nd Ave., Phoenix; or Dept. D, American Thermos Products Co., Anaheim, Calif.

RUBBER ROPE: Wind-storms can wreak havoc on tents, awnings, and fabric of all kinds. For this reason, when the samples of rubber rope arrived I immediately saw many useful applications. For example, tie-down ropes have a bad habit of stretching in a stiff wind—which means fabric



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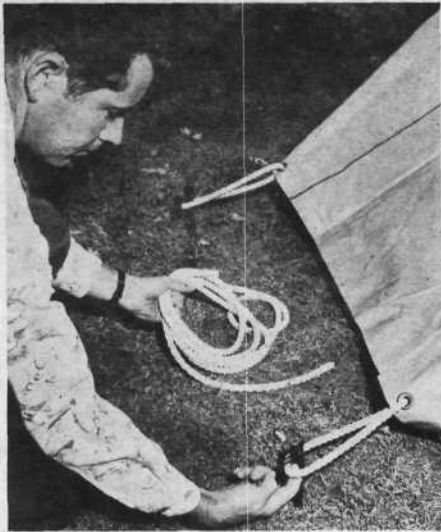
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RUBBER ROPE

then has room to whip and pop. Using rubber rope for a tie-down makes sense. It will stretch to *four times* its original length without breaking, and exerts a continuous strong, firm pull.

I used rubber rope to tie-down camping gear in the back of my pickup truck, and found it real handy. Best of all, rubber rope is smooth with no splinters. As an added attraction, this new rope can be knotted or spliced like ordinary rope. Eyesplices or splices of rubber rope into manila are possible, for use as a shock-snobber. The price is \$3.25 for a package of four 22-inch pieces of 3/8-inch diameter rubber rope. Diameters up to one inch are obtainable, in any length, on special order. From: Griffith Rubber Mills, 2439-D N.W. 22nd Ave., Portland 10, Ore.

POWER CONVERTER FOR YOUR CAR: Campers who like the convenience of 110-volt electricity on field trips can get it with a DC to AC converter. Plug it into the cigarette receptacle of your car or truck and instantly convert six-volt or 12-volt current to 110-volt. You can draw up to 50-watts of power with Teredo Sportsman, for \$29.95. This means that you can operate your electric shaver, record player, or other small electrical appliance when away from a power source. I tried the Sportsman on a recent trip and found it handy for

operating my shaver. It's small enough to pack in the glove box of your car. Larger models of up to 300-watts capacity are available from the same company: Teredo, 1068-D Raymond Ave., Saint Paul 8, Minn.

NEW IDENTIFIER BILL-FOLDS: The day of the credit card is upon us, and it is sometimes difficult to fit them all into a conventional wallet. Some of my friends carry a dozen credit cards! Fraternal Suppliers have solved the problem with a 17-view passcase-billfold, which should satisfy anyone! Made of top-quality vinyl, this new billfold will probably resist desert-induced perspiration better than ordinary leather. Surprisingly, the item sells for one lonely dollar. The manufacturer also makes sturdy vinyl *flight briefers* for a low \$2, which are large enough to hold several is-

sues of *Desert* or a cluster of lost mine maps. From Fraternal Suppliers, 1514-D Sweetbriar, Palmdale, Calif. *///*

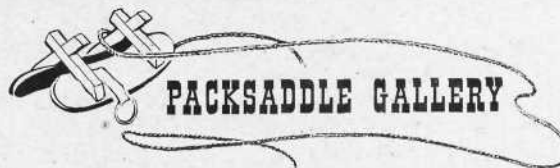
JANUARY CALENDAR

- Jan. 2-6:** Arizona National Livestock Show, Phoenix.
Jan. 14: Saguaro Lake Trek, Mesa, Ariz.
Jan. 20 - 21: Junior Rodeo, Phoenix.
Jan. 21: Desert Sun Ranchers' Rodeo, Wickenburg, Ariz.
Jan. 27-28: Death Valley Open Horse Show at Furnace Creek Ranch.
Jan. 27 - 28: Annual Rodeo sponsored by Palm Springs Mounted Police at Polo Grounds, Palm Springs.

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Page 4: Cartoon by B. F. Norberg. 8-9: Al Merryman. 11: San Bernardino Courty. 17: (top) Moss Photography. 20-21: Chuck Abbott and Esther Henderson. 25: Map by Norton Allen. 43: Henry Mockel.



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By RANDALL HENDERSON

ONE OF THE legislative proposals on the agenda of the 87th Congress which convenes for its second session this month involves complete revision of the public land laws. This will be the first major plan for the disposal of public lands since 1938 when the Small Tract Act, known as the Jackrabbit Homestead law, was passed.



Uncle Sam still owns 439 million acres of vacant land in addition to the National Forests and Parks, and in recent years there has been increasing pressure from private individuals and corporations who wanted to acquire these lands for development or speculative purposes. To this end, four bills are now pending—H.R. 7788 by Congressman Aspinall of Colorado and H.R. 5277 by Congressman Saund of California being the most favored.

Good homestead land in a temperate zone where a family could stake its claim, build a home and start growing crops with the assurance of ample rainfall has practically all been taken up. Most of the remaining land is in Alaska and the desert Southwest.

We desert dwellers have a special interest both in the manner of disposing of this land, and the use to be made of it. For the new owners will be our not-far-distant neighbors. We do not want it to become the pawn of speculators. Nor do we want the scenic canyons fenced off with No Trespass signs, or the timbered slopes of the higher elevations which are the source of our water supply denuded of their vegetation.

Recently a Congressional Sub-Committee which is studying the proposed legislation held a hearing in Palm Springs. One of the most constructive proposals at the hearing was the petition of the Desert Protective Council. The key paragraph of the Council's resolution was this:

"That in the sale of public lands to private or corporate purchasees, there be reserved in perpetuity for public use for schools, parks, playgrounds, libraries, civic centers, nature reserves or other public non-profit use, a parcel amounting to 10% more or less of the total acreage so disposed, and that the county wherein such land is located be given title in trusteeship for such reservation pending the time when the citizens of the immediate area shall have need for such sites for the purposes specified herein."

This is a long-range proposal, and the great tax saving which would accrue to a later generation of tax-

payers, is evidenced by a recent experience in my home community. Here in California's Coachella Valley, desert real estate is booming. Land once regarded as quite worthless is bringing fabulous prices. Three years ago our newly formed Junior College district paid \$4000 an acre for a 160-acre campus site—\$640,000! This parcel of land was given to the Southern Pacific railroad originally as part of its subsidy for building the southern transcontinental railway line. The Espee has long since disposed of it, and there was a time when land in this area could be bought for less than \$5 an acre. As recently as 1946 some of it was sold for \$10 an acre.

Spokesman for the Desert Protective Council pointed out that vacant public land now belongs to all the people of the United States. "Why then," he asked, "should we sell it today to private owners for appraisals of perhaps \$25 or \$50 an acre, and make it necessary for another generation of Americans to buy it back for schools, parks and other public purposes at prices which may range from \$1000 to \$5000 an acre?"

If there are readers who share this view, letters to the Sub-Committee on Public Lands, House of Representatives, Washington, D.C., would be influential in securing the necessary amendment to the legislation now under consideration.

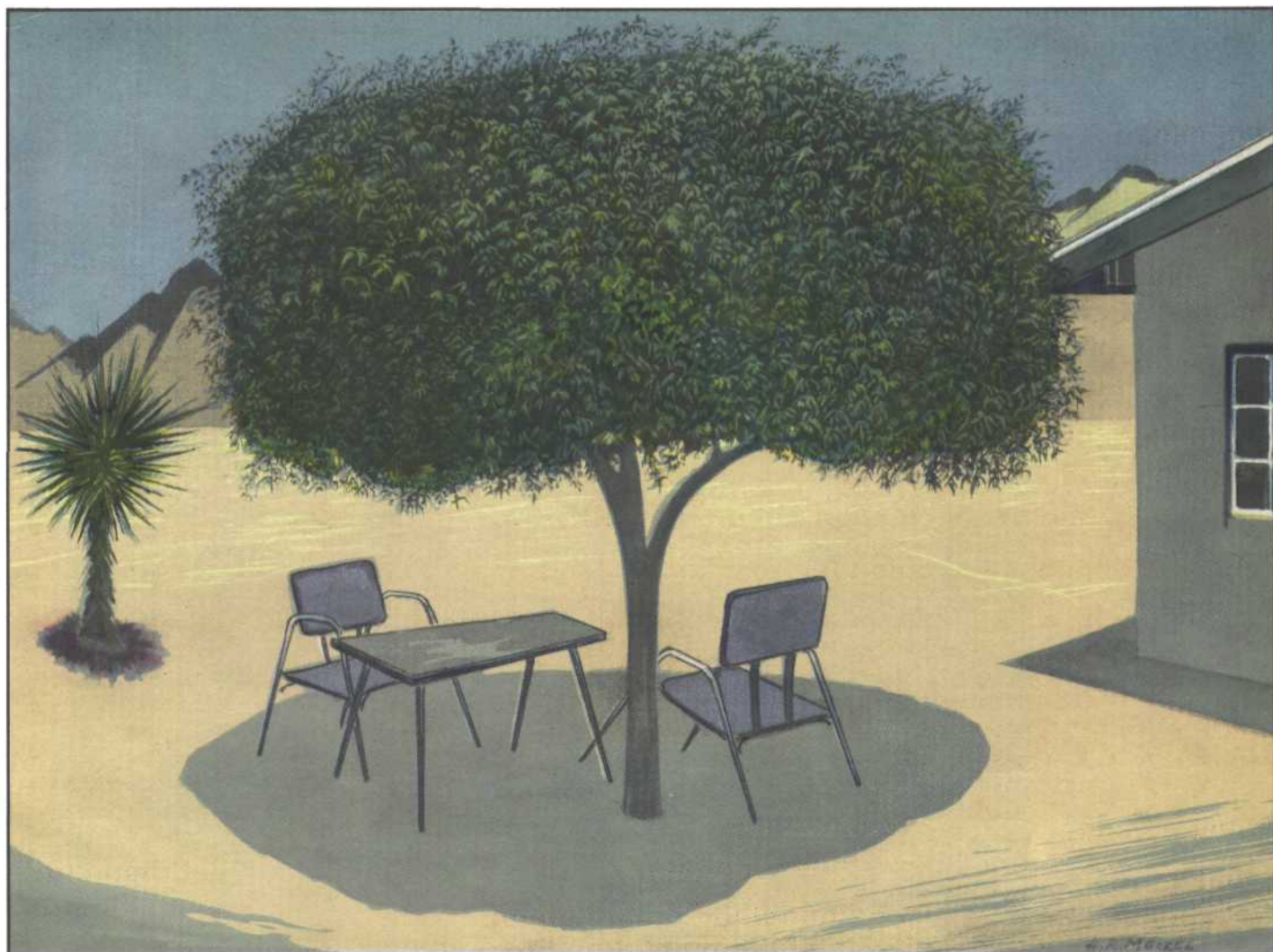
My personal view is that a minimum of 40 acres in each 640-acre section should be reserved for these public purposes, the land to be selected by the county administration wherein the land is located, at the time of the sale.

* * *

Not far from my home are the Cahuilla Hills where an entire section is now occupied by Jackrabbit Homesteaders. In one of the neatest little cabins in the tract lives Mora Brown who in past years has contributed some beautiful prose to the pages of *Desert*.

I think of Mora sometimes when I hear a newcomer complaining about the summer heat, the sandstorms, and the seemingly drab landscape of the arid horizon. Those were Mora's impressions when she first came to this desert frontier.

But the desert eventually won her over. The time came when she wrote: "In every visit to the desert I find new lessons waiting. From the twisted Joshua tree I am learning more of fortitude. From the Yucca—expectancy. From the Saguaro—dignity. From the rugged hills—steadfastness. From the small green strugglers on the desert floor—courage and persistence. And from the desert's vastness, as in the mountain's song, I am learning to discard the clutter of my man-made world, and sense more clearly the presence of the Source of Peace."



The Hybrid Mesquite--After Three Years

In 1933, a Texas nurseryman named Tex Reese crossed a beautiful—and thornless—Peruvian mesquite tree with a grizzled all-male mesquite from our Mojave Desert. Happily, the offspring took the best from both parents: the Peruvian tree's fine shape and thornless quality; the American tree's toughness and amazing ability to grow in the worst possible tree environments.

In the years that followed, Reese grew and tested his new tree, now formally named *Prosopis glandulosea hybridis reeseanae*. Once established, the handsome trees needed no watering—even in the hottest desert areas. But, despite this significant find, Reese's new creation remained just another of a busy nurseryman's many minor projects until *DESERT* carried an article on the Reese hybrid mesquite in the issue of October, 1958.

"The reaction to this story in *DESERT*, the first publicity ever given to my tree, was truly fantastic," reported Reese. "It was the turning point in the hybrid mesquite's life—and of my life, too. We got requests for trees from people throughout the Southwest. More than 40 newspapers and magazines picked-up the *DESERT* story and rehashed it. The floodgates were opened!"

What has happened to Reese and his tree since the '58 *DESERT* article appeared?

Twenty-thousand hybrid mesquites have been sold! They are taking root in every desert area of Arizona, New Mexico, Nevada, California and Texas.

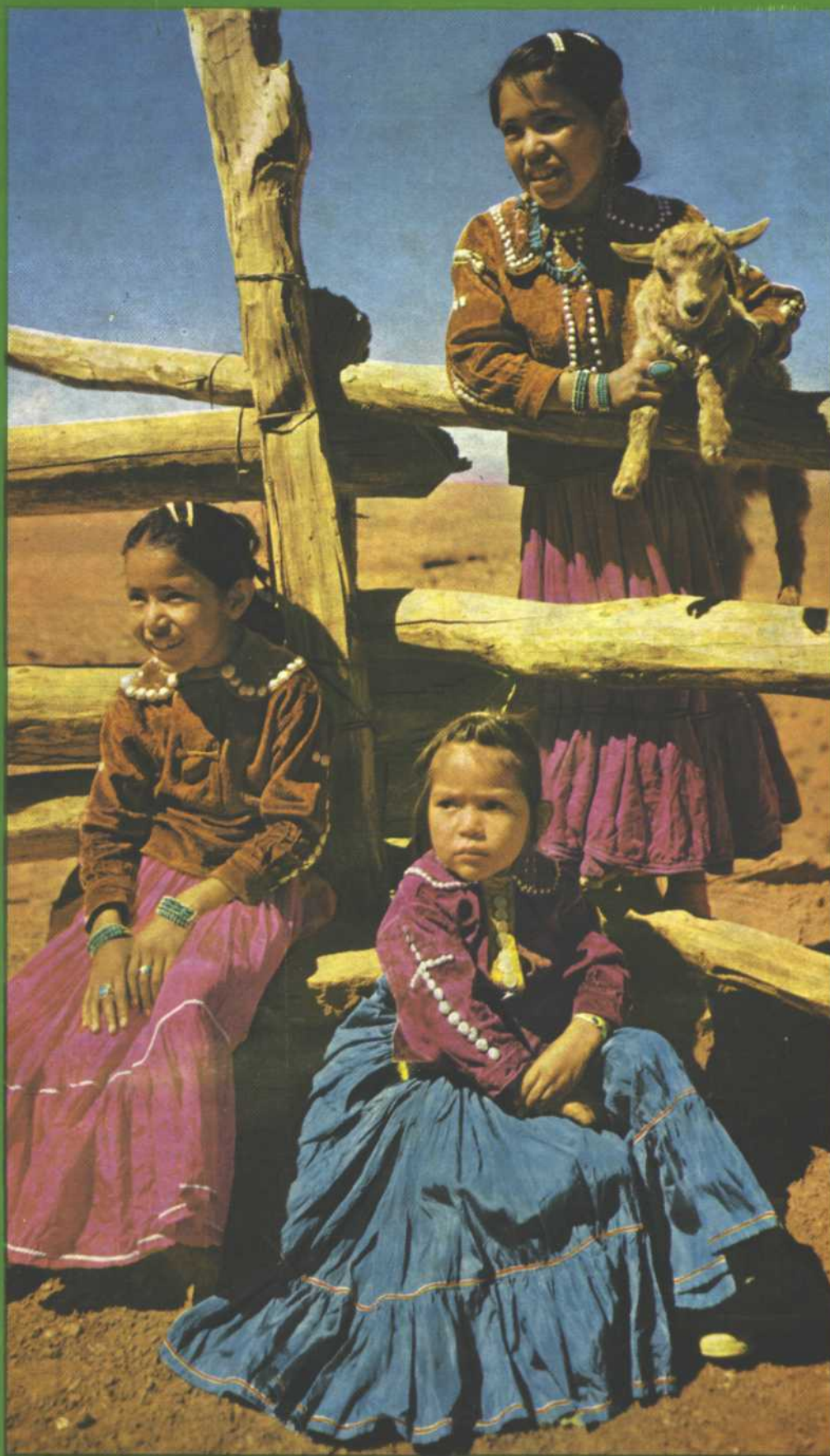
The testimonials keep coming in, and it would appear that the new tree is a success as predicted in the first *DESERT* story: "Reese's mesquite . . . may blossom into one of the most significant Southwestern landscape advances in years."

In May, 1960, Riverside County in California planted 600 hybrid mesquites near Palm Springs—in "soil" classified as blow sand. Every tree is still standing and growing rapidly. Also in May, 1960, 100 3½-foot hybrid mesquite "whips" were stuck in the ground at Blythe, Calif. Today, these are 12 feet high; trunk diameter is 3½ inches.

The Nevada Highway Department planted 100 hybrids at desert roadside parks. These two-year-old shade trees are now 10-feet high, and in some areas are the only green vegetation in sight.

Reese carries around with him a bulging packet of letters from grateful customers—jackrabbit homesteaders who had about given up on finding a tree that would grow so far away from a city water supply; motel operators in remote desert towns who had their landscaping problems solved; ranchers whose new mesquite windbreaks are rapidly growing to useful size; happy homemakers who had longed for a touch of greenery in their yards.

Reese, with headquarters at Desert Hot Springs, Calif., estimates that he will find desert homes for 60,000 hybrid mesquites in 1962; and 250,000 in 1963. ///



"DAUGHTERS
OF
THE NAVAJO"

*Photograph
by
Chuck Abbott*